

BRITISH
COMMONWEALTH
OBJECTIVES

19015

Acc. No.	19015.
Class No.	G. 29.
Book No.	44

44

Contributors

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FRED. H. ANDREWS, O.B.E.

Formerly Principal, Mayo School of Art, Lahore; Curator, Punjab Central Museum, Lahore; Organizer of the Stein Collections, Central Asian Antiquities Museum, Delhi; and Principal, Amar Singh Technical Institute, Srinagar

THE RT. HON. THE VISCOUNT BENNETT, P.C., K.C.

Prime Minister of Canada, 1930-35

SIR BERNARD BOURDILLON, G.C.M.G., K.B.E.

Governor and Commander-in-Chief, Nigeria, 1935-43

DR. CHARLES CAMSELL, C.M.G.

Deputy Minister of Mines and Resources for Canada, and Commissioner and Member of Council of North-West Territories

SIR ANGUS GILLAN, K.B.E., C.M.G.

Director, Empire Division, British Council

THE REV. H. M. GRACE

Educationist, Uganda, 1914-34; Principal, Achimota College, Gold Coast, 1935-40

GUY B. GRESFORD

Australian Scientific Research Liaison Officer

THE RT. HON. THE LORD HAILEY, G.C.S.I., G.C.M.G., G.C.I.E.

Chairman, Colonial Products Research Committee

SIR HARRY LINDSAY, K.C.I.E., C.B.E.

Director, Imperial Institute, and Vice-President, Royal Society of Arts

F. L. MCDUGALL, C.M.G.

Economic Adviser in London to the Commonwealth Government of Australia

SIR FRANK NOYCE, K.C.S.I., C.B.E.

Member for Industries and Labour, Government of India, 1932-37

A. L. POOLE AND DR. I. E. COOP

Scientific Liaison Officers for New Zealand

A. P. VAN DER POST

Senior Trade Commissioner for the Union of South Africa in the United Kingdom

19015
Edited by

SIR HARRY LINDSAY, K.C.LE., C.B.E.

*Director, Imperial Institute and Vice-President
Royal Society of Arts*

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1907



BRITISH COMMONWEALTH OBJECTIVES

PUBLISHED IN CONJUNCTION WITH
THE ROYAL SOCIETY OF ARTS



RECEIVED



MICHAEL JOSEPH LTD.
26 Bloomsbury Street, London, W.C.1

FIRST PUBLISHED 1946

Acc. No.	19015.
Class No.	G. 29.
Book No.	44

*Set and printed in Great Britain by Tonbridge
Printers, Ltd., Peach Hall Works, Tonbridge,
in Bembo eleven on twelve point, and bound by
James Burn.*

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FOREWORD

By SIR HARRY LINDSAY, K.C.I.E., C.B.E.

*Director, Imperial Institute and Vice-President, Royal
Society of Arts*

THE BRITISH COMMONWEALTH OF NATIONS HAS HAD MANY different objectives, as indeed must every living and growing organism which has capacity to develop from the simple to the complex; and particularly a political organism capable of throwing out new and complex political structures. In its earliest years, during the fifteenth and sixteenth centuries, before it had become an Empire, its objectives were simple and almost haphazard. Exploration and discovery were the watchwords of the fifteenth century, adventure and conquest marked the sixteenth century, with Spain and Portugal as the chief and, for a long time, successful rivals of Britain; buccaneering, with good, bad or indifferent results, was the order of the day.

With the foundation and prosperity of the great trading companies, and the rivalries of Holland, France and Britain, the story of British overseas expansion takes a new turn. Commerce becomes the chief objective of the seventeenth century, and as a result of commercial ambitions the slave-trade spreads its tentacles over the tropics. The eighteenth century witnesses the climax of the struggle for sea-power, with the British objective clearly defined as the international freedom of the seas. Sea-bases had, of course, long been in demand, but now their value grows more obvious as the East-West-South trade-routes become more and more profitable.

The nineteenth century sees a quickening of the tempo of British expansion with new and more complex objectives. It is true that the American Colonies have been lost, but with their

loss there develops a more serious attitude towards oversea responsibilities. The freedom of the seas is guaranteed by the conclusion of the Napoleonic wars; and this freedom is directed towards the assertion of moral and spiritual ideals, and particularly towards the suppression of the slave-trade. Mary Kingsley and Livingstone and the great missionary activities in Asia and Africa belong to this period. The Pax Britannica becomes a reality as law and order are established in new spheres of influence in Africa, Asia and the Pacific; the objectives become more humanitarian and Christian.

This tendency is emphasized also in the assertion of British supremacy in many Colonies previously foreign—a signal not for violence to foreign elements in population, laws, customs or religion, but rather for tolerance and collaboration. The association of French and British in Canada, Newfoundland, Mauritius and the Seychelles, and of Dutch, French and British in Capetown, is strengthened and developed in Canada by the great westward migration of European races towards the American continent during the second half of the century. So also British India and the Indian States co-exist happily side by side in post-Mutiny days. New Zealanders and Maoris gain in mutual respect after the signing of the Treaty of Waitangi, and drop all pretence of a colour-bar. Many States volunteer to accept the suzerainty of the British Crown—Malta; Tonga; Malay Sultans; Chiefs of Eastern and Western Africa. The Empire is becoming a Commonwealth in which local laws, customs, culture and religions are not submerged but respected and strengthened; the “common weal” is taking shape and substance.

Already the nineteenth century had seen the formation, in 1867, of the Dominion of Canada. Before that date colonial administration had tended to identify two types of “Colony,” whose different characters and characteristics came to be more clearly recognized as the century drew to a close—on the one hand the settlements populated by British residents who brought with them their own British forms of self-government and

founded the Dominions of to-day; and on the other hand the trading-stations or naval bases with few or no permanent settled British residents, but a British form of administration in the hands of a Governor and his staff. In the case of British India and again of West, Central and East Africa, the trading-stations developed, the former into the Empire of India and the latter into large areas administered as Colonies, Protectorates or Protected States. In fact, "Protection," both from foreign enemies and from internal disorders, became the watchword.

Incidentally, an interesting example of changes in word-values occurs in the development of a "Colony" from its ancient Greek meaning of a settlement of farmers, emigrants from one motherland, to its present meaning of a "Dependency" in which British settlers may or may not form part of the permanent population. Examples of Dependencies which are also Colonies in the ancient Greek sense are some of the West Indies, the Falkland Islands, Tristan da Cunha, Pitcairn, and (so far as the white population is concerned) Kenya, the Rhodesias and Nyasaland.

The early years of the twentieth century witness the real significance of the Dominion form of government, with the emergence of the Dominions of Australia, New Zealand, South Africa, Newfoundland and Eire, whose complete autonomy, with that of their prototype, Canada, is recognized in the Statute of Westminster. Simultaneously, a change occurs in the attitude of Britain towards India, Burma and the Dependencies. By successive stages, from the Morley-Minto reforms onwards, the claims of India to increasing measures of representative self-government are recognized, with Dominion status as the objective. Burma receives representative institutions with her own Premier and Cabinet; Southern Rhodesia is recognized as a "self-governing Colony"; the advance of Ceylon towards fuller self-government is assured. Similarly, the West Indian Colonies, some of which have had representative self-government for very many years, advance towards greater administrative responsibilities; whilst in West and East Africa the value of

local forms of self-government is increasingly recognized. The objective of "Protection" in the nineteenth century has passed during the twentieth through the phase of Trusteeship to that of Partnership, in which both the sovereign or suzerain power and the indigenous peoples have much to learn from each other in the task of administration, as well as in education, welfare, arts and crafts and industries.

The study of Eastern and Southern languages, customs and arts was most active, perhaps, in the United Kingdom during the second half of the nineteenth century, when many Societies were founded to spread a knowledge of overseas civilizations. This interest was not limited to the Overseas Empire, but undoubtedly the give and take of enquiry and information with distant lands was immensely stimulated by Empire contacts. It was realized that in the domain of culture we of this realm had as much to learn as to teach. Between the two World Wars of the present century the interest which England and particularly London had shown in the manifold diversity of oversea civilizations was overshadowed by pressure of international relations, but recently a revival has occurred, and the activity of cultural societies seems to be on the increase.

Finally, the application of scientific methods to the development of natural resources, which had proceeded rapidly with the advance of scientific agriculture, forestry, geology and mining, takes a new turn during the twentieth century. It is not enough to apply new methods to the exploitation of tropical products; it is necessary also to train the indigenous populations in the mastery and application of such methods, to keep them up to date, and to provide a connecting link between the scientist and the local producer. The promotion of scientific knowledge, of a healthy diet and the means of achieving it, and of skilled industrial effort to supplement primary production, these are important objectives which face the British Commonwealth, particularly perhaps in its tropical and sub-tropical territories, and which have acquired great prominence during the present

century. Towards their realization the Colonial Development and Welfare Acts of 1940 and 1945 have already contributed much and will contribute still more with the recognition of the principle that backward areas cannot be expected to improve themselves on the strength of their own financial resources, but have a right to claim financial aid from central revenues.

* * * * *

This condensed summary has attempted to show the changes of British Commonwealth objectives from days of exploration and discovery and of simple buccaneering to the growth of naval and commercial supremacy, the rise and death of the slave-trade, and finally through the humanitarian efforts of the nineteenth century to present-day objectives of self-government, respect for local customs and institutions, scientific training, and the give-and-take of arts and crafts and industries. One-way traffic has become two-way traffic as both partners recognize the value of independent contributions to the common pool of knowledge and effort.

* * * * *

The various chapters comprising this volume represent a collection of papers read by different authors at meetings of the Royal Society of Arts on various dates during the past few years. Each deals with one phase or another of life in the Overseas Empire, and illustrates, in its own way, one or other of the outstanding objectives of the British Commonwealth of Nations as constituted to-day. The chapters are printed, for ease of reference, in the following order—first, those on Empire subjects of general interest, affecting the whole Empire (Chapters 1 and 2) or the Colonial Empire (Chapters 3 and 4); or the Empire countries of the East (Chapter 5); then those dealing with particular Dominions (Chapters 6-9); India (Chapter 10); and individual Colonies or groups of Colonies (Chapters 11 and 12). For the purposes of this Foreword, however, it is convenient to deal with them in the groups into which they naturally fall:

Politics, Economics, Science, Exploration and Development, Capital, Labour, Education, and Cultural Relations.

Of necessity, there must be many gaps in the objectives described in a single volume; medical science is not included, nor engineering, nor transport nor communications, all of which have played a great part in Empire-building. Yet the present selection, if it does no more, at any rate illustrates the wide range of the problems now confronting the British Commonwealth, and suggests some promising lines of investigation and solution.

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POLITICS (ALL-EMPIRE)

The Political group, comprising Chapters I and II, helps to answer the questions: How does the Commonwealth stand politically? What are the types of structure which it tends to throw out in the realization of its political objectives? Lord Bennett's paper entitled "Empire Relations," opens with an interesting and comprehensive survey of the various countries comprising the British Empire. There are Federated Dominions such as Canada and Australia; Unitary Dominions such as New Zealand, Eire and Newfoundland (until 1934); and there is the Union of South Africa with its four provinces. Some of the Dominions control dependent territories, mandated or otherwise. There are British India and the Indian States—Burma and the Shan States. And there is a wide variety of Dependencies subject in varying degree to the United Kingdom, from the Isle of Man and the Channel Islands to the Colonies possessing responsible government such as Southern Rhodesia. There are West Indian Colonies with an elected House of Assembly and a nominated Legislative Council; there are other Colonies and Protectorates with Legislative Councils partly elected and partly official, or nominated but partly official partly unofficial, or nominated and wholly official; and there are Colonies and Protectorates without any Legislative Council. There are Protected

States whose subjects, like the subjects of the Indian States, are not British subjects, but "British protected persons." There are territories mandated to the United Kingdom Government, some administered direct and some through Colonial Governments. There are territories, the Sudan and the New Hebrides, whose administration is shared between the British Government and a foreign Government, in the former case Egypt, and in the latter case France.

The picture is that of a great diversity of races, tongues and creeds, combined from without or combining from within to constitute the British Empire. Various were the methods—often haphazard and undesigned—by which these vast territories became integral parts of the Commonwealth. Although many additions were incidental to the conduct of great wars, yet, when the wars ended and peace treaties were made, the inhabitants of the conquered territories often preferred to remain under British rule; and indeed threatened or backward peoples have often volunteered to receive the protection of the British Government. Whether compulsion was or was not a feature of the original membership, the final picture is that of a living and growing community of nations.

The history of Colonial administration from this country is interesting. At first the King in Council was responsible, and then for a time a Secretary of State for the Southern Department. For nearly a century from the time of Charles II, a Board of Trade and Plantations controlled Colonies and Commerce. From 1768 to 1782, a separate Secretary of State for the American Department existed, but the office was abolished as a result of the American Secession. A Department of State for War and Colonies was created in 1794, but in 1854 the two Departments were separated. Throughout, Lord Bennett rightly emphasizes the importance attached to Colonial systems of Government whereby the Governor was appointed by and represented the Sovereign and acted through Legislature, Executive and Courts of Justice. It is true that the Governor could decline to approve

legislation; but the Legislature controlled the levy of taxes and grants of money and differences between Executive and Legislature were usually settled by negotiation. Although interference by the British Government in Colonial finance was naturally resented, and the love of freedom proved often stronger than allegiance to the Crown, the general result was a policy of mutual give and take.

Colonial representation in the Westminster Parliament was suggested by Hume and again by Disraeli, but no action was taken. The right solution was at last found by Lord Durham, appointed Governor-General of Canada in 1837. From the recommendations of the Durham Report dates the general establishment of responsible government throughout the Empire. Henceforth it was a sovereign remedy for the solution of Colonial Government problems.

In 1867 the four British Colonies of North America were united to form the Dominion of Canada; but it was not until the early years of the present century that the other Dominions were constituted. Meanwhile, in 1887, a Colonial Conference was held in London on the occasion of Queen Victoria's Golden Jubilee; an important Conference was held at Ottawa in 1894, attended by representatives of the Imperial Government, the Dominion of Canada, the Cape and the Australian Colonies, to consider questions relating to colonial territories and communications. A third Conference was held in 1897 during the celebration of Queen Victoria's Diamond Jubilee. The practice of holding Imperial Conferences from time to time was thus gradually established.

The closer relations between the Dominions, India, and the United Kingdom which followed the World War of 1914-1918, and particularly the inclusion of representatives of the Dominions and India in the Imperial War Cabinet in London, were the bases on which further progress was made, leading to the celebrated Balfour Declaration of 1926 defining the Dominions as "autonomous communities within the British

Empire, equal in status, in no way subordinate one to another in any aspect of their domestic or external affairs though united by a common allegiance to the Crown and freely associated as members of the British Commonwealth of Nations." This principle took shape in the Statute of Westminster, 1931.

Lord Bennett has interesting comments to make on these important developments as well as on the many Imperial Conferences held prior to and between the two great World Wars. Lord Grey had pointed out that the creation of separate fleets belonging to the different Dominions within the Empire had made it essential that the foreign policy of the Empire should be a common policy if the activities of the different naval forces were to be harmonious; and he concluded that a foreign policy must obviously be one into which the Dominions are taken into consultation.

This is an important point; and Lord Bennett draws attention to political difficulties which have arisen from failure to provide adequately for continuous consultation between the various units of the Empire on foreign policy and relations. The duty of providing the means for adequate and continuous consultation on matters of common concern to the British Commonwealth rests upon each and all of its members. Improved communications will certainly facilitate consultations between the Governments, and meetings at whichever capital is at the time most convenient. Indeed, a permanent Secretariat may be necessary to maintain continuous consultation and to ensure common action.

In an interesting conclusion, Lord Bennett describes the gradual development of the principles of inter-Imperial Preference and the final establishment of these Preferences at the Imperial Conference of 1932 held at Ottawa (in which, incidentally, as Premier of Canada, he had played the combined rôle of host, organizer and chairman). He emphasizes the importance of spreading a knowledge of the story of Empire in the minds of the growing generation. With this knowledge, co-operative

action is rendered smoother and easier. There are great difficulties to be overcome, as pointed out by Lord Milner, but the success of our statesmen in finding solutions for difficulties in the past is some guarantee of our capacity to meet the challenge of this new problem.

Lord Bennett thus portrays an Empire which is not just a static, organized society, but rather a living and growing complex of organisms developing not so much territorially as qualitatively on a basis of law and order, each unit owing allegiance to the Crown and progressing, through various stages of local self-government adjusted to local facilities and requirements, towards the final stage of responsible self-government, typified by the Dominions.

* * * * *

POLITICS (NIGERIA)

Sir Bernard Bourdillon, in his paper entitled "Partnership in Nigeria" (Chapter 11) describes how this political evolution towards self-government works out in a concrete example, Nigeria. We owe to Lord Hailey the suggestion that the relationship between the United Kingdom and the Dependencies has passed, or is passing, from that of "Trusteeship" to that of "Partnership," and Sir Bernard points out how practical a value has been attached to this change by the terms of the Colonial Development and Welfare Act of 1940, which discarded once for all the old doctrine of individual self-sufficiency—whereby a Colony's advancement was limited to services payable from its own resources—and accepted instead the sharing of financial responsibility implied in true partnerships.

The political implications of partnership turn on the education of the people in the management of their own affairs, with responsible self-government as the final goal. Nigeria is an admirable example to have chosen, to illustrate the practical working-out of this policy. There the system of Indirect Rule,

i.e., government through the medium of Native Authorities, shows great promise. It provides sound training in the difficult art of self-government and allows the transfer of authority to proceed smoothly, without friction. Sir Bernard describes the systems of local administration actually in existence in Nigeria, and in doing so propounds a series of questions, exactly the kind of questions which suggest themselves to the Western mind, and answers them from his own practical experience.

The first question, namely, whether the power of the Native Authorities is real, or merely a sham, Sir Bernard answers by pointing out that, while their statutory authority is always the same, the actual authority which they wield varies according to their capacity; and that the declared policy is to give them the maximum degree of responsibility that is compatible with good government. Of this, a practical illustration is given.

Secondly, are the Native Authorities efficient instruments of government, and, in particular, will they be efficient instruments for the greatly accelerated programme of social and economic development which may now be expected? From the human point of view, the answer is an unhesitating affirmative, for the outstanding merit of the system is that it secures the co-operation of the people themselves without which effective government action (particularly in the social and economic fields) is impossible. Sir Donald Cameron had achieved amazing results by which bodies were evolved, fitting closely into the social structure of the local tribes; and through these bodies the people themselves had a definite say in the imposition of taxation, which was in consequence much more easily enforced. Sir Bernard himself had had similar success in the Colony districts of Nigeria, where he had originally found an apathetic people in a very backward condition, but had been able to lay the foundations of a native administration in which the people took pride with most satisfactory results in keenness and social progress.

From the more mechanical point of view, the answer is not so

easy. The size, character and quality of the different types of native administration vary enormously. The most satisfactory type is that found in the Northern provinces, where the head of the administration is an Emir, assisted by a council, of which some members hold definite portfolios. There is also a regular civil service in the shape of district and village heads, appointed by and responsible to the Emir. The population is predominantly Moslem, with the traditional Moslem respect for authority. In the Western provinces the system seems similar, with an Oba, or King, and his council. But each village has its chief or Bale, not appointed by the Oba, but either hereditary or selected by the people or by some traditional nominating body. Other chiefs are also found in the more important towns, intermediate between the Oba and the Bale. And again the character of the people is different. They are less amenable to authority, and more critical of the Native Chiefs. The success of the system here turns largely on the wisdom of the Chief and his council. Conditions in the Colony approximate to this Western type of administration.

Conditions in the Eastern provinces again, are quite different, for here the social structure is characterized by an intense individualism. There are no chiefs; the head of the family is the leader, and the council which assists him may represent a village, a group of villages, or a clan. Chairmanship goes by rotation; the elements of authority are there, and the will of the people is nominally ascertained and expressed, but its practical execution is more difficult. Hence, in these provinces, the British administrative officer has to do much more by way of issuing direct orders than is necessary in either the Northern or the Western provinces. Sir Bernard is hopeful, however, that gradually a more efficient system will evolve.

The third and final question is, whether the Native Authorities, as now constituted, represent all shades of public opinion and all legitimate interests. In answering this question, Sir Bernard explains that there are two outstanding criteria for the successful

transfer of authority, namely, that the authority must be traditional and that it must be acceptable; indeed, the only real criterion is acceptability, for "conformity to tradition is merely a means (though in conservative Africa a very important and effective one) of securing acceptability." He describes some of the difficulties which have occurred in the application of this policy, particularly as a result of differences in the degree of urge towards advancement, as between senior and junior members of a community. In the Western Provinces the spirit of democracy is strong and measures are taken to secure a share in the conduct of affairs for Youth Movements and other progressive tribal societies. District Unions are a feature of the Eastern Provinces.

An important point is made in the fact that "there can be no gradual transition from a Governor responsible to the Crown to a government responsible to the people of the country." There can and must be gradual preparation for the change-over, but the change-over itself cannot be gradual. This factor in the political situation is well known in India, and Sir Bernard has rightly drawn attention to its importance in application to Nigeria. The responsibility of advising the Governor is, meanwhile, important both as an education in itself and also, from the Governor's point of view, as a method of ensuring sound decisions. Sir Bernard concludes that "at the administrative level partnership is very real," and that "the powers of the junior partner can be and are being increased *pari passu* with his increasing capacity. On the higher level there is room for more Africans in higher posts, a development which will come naturally in due course." A postscript to the paper indicates that a recent reform (involving the reconstitution of the Nigerian Legislature and its expansion to include a large number of native members selected by Native Authorities from their own membership) illustrates a definite advance on partnership lines and a closer association of unofficial Nigeria with the financial and legislative activities of its Government. This point has been expanded in

an article by the same author, published in the July, 1945, issue of *Africa*.

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ECONOMICS (PRIMARY PRODUCTS)

From political objectives we turn, with Messrs. F. L. McDougall and A. P. van der Post, in Chapters 2 and 9, to examine some of the objectives falling under the head of Empire Economics—in the former case the economics of Raw Materials (particularly those of agricultural origin)—in the latter, the economics of Manufacturing Industries (as exemplified from the experience of the Union of South Africa).

Mr. McDougall points out that the four great overseas Dominions, Canada, Australia, New Zealand and South Africa, account for 14 per cent. of the total land surface of the globe, but their population is only 1.4 per cent. of the world's population. It must be remembered that they include both the northern wastes of Canada—rapidly being opened up, as Dr. Camsell reveals in Chapter 6, but yet still in the preliminary stages of development—and the central deserts of Australia. Nevertheless, during recent pre-war years, the four Dominions furnished important supplies to world markets. Canada and Australia together normally exported some 45 per cent. of the total amount of wheat entering world trade; Australia, New Zealand and South Africa were jointly responsible for nearly 60 per cent. of the total world export trade in wool; Canada and Australia supplied the world with 38 per cent. of its imports of apples, while Australia and South Africa were responsible for 22 per cent. of its imports of raisins. The three Southern Dominions exported 20 per cent. of the world's imports of beef, and 80 per cent. of its mutton; while Canada, Australia and New Zealand sent to world markets 49 per cent. of the total of cheese, and Australia and New Zealand together 40 per cent. of the world's imports of butter.

These figures are all the more impressive when it is remembered that during 1909-13 Russia, the United States, Canada, the Argentine and Australia in that order, had been the leading world's wheat exporters. After the first World War, Russia produces more wheat but also consumes a great deal more—greatly to her credit, as Mr. McDougall points out. Canada takes her place as the premier exporter, followed by the United States, the Argentine and Australia.

Between the two world wars, the pastoral and horticultural as well as the agricultural production and exports of all four Dominions increased materially, encouraged by the serious setback to these industries on the Continent, resulting from the first World War. Malnourishment strengthened the European demands for agricultural products and the newer worlds hastened to meet these demands. Unfortunately the reaction came all too soon, accentuated not by actual over-production but by the increasing failure of the "short" countries to pay their way. The demands continued, almost as strong and persistent as during the boom years 1919 and 1920, but they were financially ineffective, and therefore practically non-existent. As Mr. McDougall says, during the two decades 1919-39, national policies were dictated by fear—fears of the economic consequences of the lack of economic and social plans, and then, as the shortsighted policies began to have their inevitable effects upon political relations, fears of war.

Some interesting examples are given of the damaging effects both on standards of living and on international trade caused by the measure of extreme agrarian protection which the agrarian countries of the Continent of Europe had been compelled to adopt under the *force majeure* of ineffective international exchanges. Between 1924 and 1934, the rates of duty on wheat imports had risen from nil in Italy and Germany and 1s. 7½d. per cwt. in France to 12s. 4d. in Italy, 18s. 11d. in Germany, and 10s. 1d. in France—all rates well above the actual value of the wheat. The World Economic Conference of 1927 recommended

general reductions of tariff barriers, but the recommendation was vain, in face of actual conditions of trade and exchange. The World Monetary and Economic Conference of 1933 "offered to an impoverished world agreements about the restriction of production"! In these circumstances, Mr. Bruce, leader of the Australian delegation, proposed to the Assembly of the League of Nations at their 1935 meeting, "that human welfare should be made the first consideration in the formulation of agricultural and commercial policies." A similar proposal was made by the Australian and New Zealand delegations to the International Labour Conference of the same year. The results of these appeals were successful. No less than twenty-five Governments established National Nutrition Committees, and international meetings of these committees were held at Geneva, and again at Buenos Aires. Unfortunately, by 1935, the political situation had deteriorated to such an extent that it occupied the forefront of the stage of world affairs and considerations of the economics of welfare had to fall into the background.

This survey of pre-war experience leads Mr. McDougall to propound the post-war problems of to-day, as he sees them. The same phenomena are apparent, of an exhausted Europe, under-nourished and under-equipped for the struggle for existence. Obstacles to the means of payment for the necessities of life are likely to be as great as ever before, if not greater. We face a new position in relation to the United States of America, which, although industrially great, has yet within her boundaries an agrarian population more numerous than the combined populations of all the British Overseas Dominions.

The lesson for the Dominions is clear: Economic nationalism would be futile. War-time experience will favour large-scale manufacturing units and high output per man employed; i.e., export markets will be necessary to sustain their secondary industries, whilst "Dominion farmers will adopt the latest scientific technique and thus increase production and reduce costs. Reliance upon our own local markets can, therefore, be

no sort of solution of our problems." In 1932, under pressure from the Hawley-Smoot tariff of the United States, the Empire turned in upon itself and tried to solve its problems by a general policy of inter-Empire preferences. Mr. McDougall thinks it extremely doubtful whether under the new conditions of world trade this policy will provide a full solution, bearing in mind that co-operation between the British Empire and the United States is, and will continue to be, the one hope of world security.

Mr. McDougall has thus completed his survey of world markets for Dominion products between the two wars and has stated the problems which now face Dominion producers. Having done so, he turns to the difficult question of their solution. He suggests that the right and possibly only solution is to be found in the word "welfare." President Roosevelt's third freedom was "freedom from want," and this Mr. McDougall defines as sufficient food, adequate housing and clothing, reasonable leisure and the means for its enjoyment. He goes on to show that if these ideals could be achieved the effects on the national agricultures of Europe would be astonishing. A first consequence would be a great increase in the production of the protective foods—milk, fruit and vegetables—and from the arable areas feeding-stuffs for dairy cattle and pigs. There would be an increased demand from abroad for wheat and other grain, and for meat, dairy products and fruit to supplement local production. Wool and cotton would be in better demand for clothing. All these surplus requirements would come to Europe from the prairie lands of America, or from the southern Dominions, South Africa, Australia, New Zealand. The funds for these purchases would be found as a result of reductions in the armament programmes of Western Europe.

Secondly, with regard to secondary industries—these are going to be far more widely spread than before and the principal industrial countries will have to become industrial specialists, producing the newest consumption products and also the capital goods necessary for the building up and maintenance of secondary

industries abroad. Freedom from want is thus our vital interest, and the solution of the problems of the Dominion primary producer depends upon rising standards of living, everywhere in the world.

In an interesting note to Chapter 6, Mr. McDougall points out that Australian initiative has borne fruit in the important decisions adopted at Hot Springs for international co-operation on problems of Food and Agriculture; and in the agreement reached at San Francisco for international co-operation on Social and Economic questions. Few will disagree with his conclusion that the late President Roosevelt's third freedom, Freedom from Want, provides a most important key to the solution of post-war difficulties.

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ECONOMICS (SECONDARY PRODUCTS)

With regard to the economics of secondary industries, Mr. A. P. van der Post opens his paper (Chapter 9) on Industrial Development in the Union of South Africa with an inspiring quotation from a recent speech by Field-Marshal Smuts: "South Africa is now on the *Great Divide*—hitherto mainly an agricultural country, there is no doubt that South Africa now is destined to become largely an industrial one. Our country is going to be industrialized on the largest scale. Mineral engineering and manufacturing industries will be developed, and will bring with them great problems."

In developing his theme, Mr. van der Post outlines the gradual economic progress of the country in three stages. The first stage covers some two centuries from the landing of Jan van Riebeeck in Table Bay in 1652, and the successful efforts of the Dutch East India Company to encourage farming in and around the Cape, to 1867, the year of the first diamond discovery. During this Pastoral Period the population expanded inland, and in

doing so turned from the vineyards, fruit and vegetable production of the Cape to purely pastoral areas with little external trade.

The second stage, from the discovery of diamonds to 1909, the author of the paper describes as the Agricultural-Mineral Period. During this period South Africa's gold production expands and more and more determines the country's economy. There occurs a large influx both of population and of capital. A large inland market develops, centred in Johannesburg. Transport facilities grow rapidly. The interior is opened up and rich deposits of minerals are discovered and worked—coal the most important after diamonds and gold; but also iron ore, limestone, dolomite, manganese, chrome, tungsten, copper, corundum, fluorspar, asbestos, tin and platinum. Along with these mineral discoveries and workings, and partly as a result, three other developments occur of great importance to the economy of South Africa:

- (a) Farming of the ranching or pastoral type gives way to much more diversified types of agriculture and horticulture, and more particularly to the cultivation of maize, the production of milk, butter and cheese, fruit-farming and market-gardening.
- (b) Port developments are greatly encouraged and with them the contacts of the territories with the outside world.
- (c) Secondary industries develop, partly in conjunction with railway and port expansions, partly to serve the mines, as, for example, in the establishment of engineering workshops and of factories for the manufacture of explosives.

The third stage, which Mr. van der Post describes as the Agricultural-Mineral-Industrial Period, starts with the consummation of the Union in 1910, and carries on to the present day. Agriculture and mining still occupy most important positions, but their supremacy is increasingly challenged by the rapid growth of the secondary industries. In this context he quotes some striking figures. The gross output of secondary

industry increased from a value of £17½ million in 1911 to nearly £200 million in 1939. Again, according to an estimate made by Professor S. H. Frankel, of the Witwatersrand University, secondary industry contributed in 1924-25 a sum of £28 million towards a national income of £228 million, or 12.3 per cent. In 1940-41, the contribution was £85 million towards a national income of £472 million, or 18 per cent. In this calculation mining still contributes more than the secondary industries, but the latter are increasing at a rate which justifies the prophecy that their aggregate value will before long exceed that of the mineral production of the Union. Both the World Wars have naturally assisted materially in these developments, as also has the adoption of a moderately preferential tariff policy in 1925.

That these secondary industries of South Africa cover a wide range is shown by the list of seventeen classes into which they are grouped, from wood, leather and metals to food, drink and clothing, from ships and vehicles to chemicals, surgical instruments and jewellery. The South African Railways and Harbours Administration has for long manufactured its own requirements. Escom (the Electricity Supply Commission) and Iscor (the Iron and Steel Industrial Corporation Ltd.) have developed their own factories and workshops—the latter particularly for munitions of war.

The Industrial Development Act of 1940 established the Industrial Development Corporation with a share capital of £5 million, all taken up by the State and paid for from public moneys. The objects of the Corporation are:

- (a) With the approval of the Governor-General to establish and conduct any industrial undertakings; and
- (b) to facilitate, promote, guide and assist in the financing of:
 - (i) New industries and industrial undertakings; and
 - (ii) schemes for the expansion, better organization and modernization of, and the more efficient carrying out of, operations in existing industries and industrial

undertakings, to the end that the economic requirements of the Union may be met and industrial development within the Union may be planned, expedited and conducted on sound business principles.

Its duty is, generally, to guide and assist in the establishment or development of industries whilst not providing an unduly large share of the capital necessary for the undertaking. By the end of 1943 the Corporation had made loans and advances and had subscribed stocks and shares to a total of nearly £900,000, whilst there were contingent commitments amounting to nearly £1½ million. Mr. van der Post records his view that "although only four years old, the Corporation has made considerable progress in fulfilment of the objects for which it was established."

An important feature of South Africa's secondary industries is the extent of their independence of imported raw materials. Of the total value of all raw materials produced in the Union, about 45 per cent. are agricultural, animal or forestal in origin, and this class accounts for some 22 per cent. of the total of raw materials, local and imported, as consumed by industry. The list already given of minerals produced in the Union, shows how wide a range is available as the raw materials for secondary industries. A third group of raw materials comprises those which are products of other industries, such as pig iron, steel, cement, sugar, salt, paper, chemicals, boxes, soda, glycerine, vegetable oils and fishery products.

Food, drink and tobacco between them comprise the largest single group of secondary industries of the Union, with a gross output valued at approximately £48 million, and using only 10 per cent. of imported raw materials, besides some imported containers and packing materials. The most important industries in this group are those related to milling and sugar, tobacco, wine and fruit-canning, butter, cheese and milk. The fruit-canning industry, in particular, has made great strides during the war, and has provided the United Kingdom with increasing quantities of fruit-pulp, jam and marmalade. The fish-canning

industry made headway—in the French markets before the war, and now also in the United Kingdom. Dehydration of fruits and vegetables has also made satisfactory progress during the last two years.

The metal and engineering industrial output was valued at about £31 million during the last pre-war year, relying slightly more on imported than on local raw materials. There is a great future before the steel industry of the Union, especially in its production of high-grade alloy steels—ferro-chrome, chrome steel and chromium alloys. In general, the metal and engineering industry owes much to the encouragement afforded to it by the great expansion of gold-mining.

An interesting example of the growing development of local raw materials is drawn from the chemical industry of the Union. During the first World War the industry had to import both sulphuric acid and nitric acid. Nowadays, sulphuric acid is made locally from iron pyrites obtained from the gold mines and nitric acid from atmospheric nitrogen.

Mr. van der Post, in conclusion, claims, with justice, how important is the development of secondary industries to the Union, not only in the resulting exploitation of natural resources, but also in thereby securing a properly balanced national economy. He quotes Dr. H. J. van der Byl as stating: "Our effective population can be very considerably enlarged by making better provision for and increasing the productive capacity of our natives and unskilled whites. These people do not ask for charity; they want and are entitled to opportunity." The effect of the successful establishment and furtherance of secondary industries will be to provide such opportunity and to raise both earning capacity and standards of living in a country which maintains over 10,000 factories employing over 352,000 hands (more than half of whom are non-Europeans) and distributing annual wages of over £46 million.

The paper concludes with some most interesting and instructive examples of secondary industries developed in the Union,

chiefly by Iscor, under pressure of war conditions. It affords ample evidence, throughout, of a State successfully planning its own industrial future, based largely on its own raw materials; and already going far to achieve an efficient balance between its primary and its secondary industries.

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SCIENCE (A NATIONAL ORGANIZATION)

Two papers in this collection (Chapters 7 and 8) deal essentially with scientific problems, the one by Mr. G. B. Gresford on "Scientific Aspects of Australia's Industrial Development," and the latter a joint paper by Mr. A. L. Poole and Dr. I. E. Coop entitled "Scientific Collaboration between the United Kingdom and New Zealand in War and Peace"—Mr. Poole dealing with the more general aspects of this collaboration and Dr. Coop with the more specialized war-time developments.

In the earlier sections of his paper, Mr. Gresford describes some of the scientific problems which face Australia's industries, primary and secondary. One outstanding feature of his survey is the colossal contribution made by Australia to the world's markets for primary products with her area of nearly three million square miles and her population of only a little over seven millions. The figures quoted by him may be reproduced here in illustration:

Australian pastoral products reached in 1939-40 a total market value of £81 million; and of this wool accounted for £62 million, more than one-quarter of the world's total requirements.

In 1943, Australia's dairy herds totalled over four million head; in 1941, Australian flocks totalled one hundred and twenty-five million sheep.

Annual production of wheat is in the order of one hundred and sixty-two million bushels, a large proportion exported.

Mineral production in 1940 reached the high total value of £40 million, of which gold accounted for £17½ million.

Although Mr. Gresford draws no such conclusion from these figures, they provide a sufficient answer to critics who allege that Australia does not furnish her full share of land and employment to meet the needs of the four other and greater Continents. Recent catastrophes of drought and forest-fires witness that vacant land-space is not in itself the complete solution to over-population, for clearly the land must be capable of economic return and much of Australia's land surface is not yet in this category. The figures show how great a contribution Australia makes to world needs of primary products from the resources at her disposal.

To revert to the subject of the Chapter, wool is certainly a fit subject for scientific research and must continue to be so for some years to come. The health of the sheep, their pasturage, the treatment of disease, all figure high on the list of research problems. The competition of synthetic wool has intensified the study of natural wool; its quality and yield, better and cheaper processing, and the development of new uses, engage constant attention on the part of Australia's Council for Scientific and Industrial Research. Similarly, the dairy industry has benefited by research on the selection of pure-bred stock and on improvements to pasturage.

With regard to wheat, imported varieties were not found satisfactory and Australian farmers started to breed their own varieties. Fifty years ago an Englishman, Farrer, developed new and satisfactory varieties of seed wheat, with the result that greater yields were secured; wheat could be grown in areas in which the rainfall had previously been considered inadequate; and superior milling types were produced. Phosphate deficiency was overcome by the use of artificial manures, with consequent expansion of the manufacture of such manures and of sulphuric acid. Scientific method is similarly applied to the production of oats and barley.

Australia is the only country in the world where sugar cane is grown entirely by white labour; and there cannot be many

other countries in which the sugar cane and beet sugar industries co-exist. The cultivation of cotton and of tobacco has owed much to scientific methods; and the Council of Scientific and Industrial Research has done much for the dried fruit industry, particularly in irrigated areas, and for the citrus industry.

To turn to the mineral industries, Mr. Gresford gives an interesting account of the mining and treatment of lead-silver-zinc ores, of which Broken Hill in the west of New South Wales is the chief producer, whilst other mines are worked at Mount Isa, Queensland, and on the west coast of Tasmania. The existence of these ores was proved in the 'eighties of last century, and intense metallurgical experiment has been devoted to their treatment. Operations were at first confined to the mining of rich carbonate ores and their smelting at Broken Hill or at centres in South Australia convenient to the sea-board. In the next stage, ending in 1914, most companies were producing lead and zinc concentrates and selling these products for final treatment overseas. The third and present stage developed in 1915, whereby practically the whole of the lead concentrate is reduced to metal and about 60 per cent. of the zinc concentrate. Port Pirie in South Australia smelts the lead whilst the zinc is produced at Risdon in Tasmania.

During the whole of this period much experimental work was carried out by metallurgists and chemists, and an account is given by Mr. Gresford of the problem of treating the sulphide ores and how it was satisfactorily solved. Similarly, the problems arising from the refining of lead were successfully met, the staff of Broken Hill evolving a continuous lead-refining process for drossed smelter bullion. The rapid development of the iron and steel industry since the first World War is described as one of the most remarkable achievements of Australian industrial history; and the fact that steel is produced in the Commonwealth probably cheaper than anywhere else in the world is rightly quoted as an indication of the success which has been achieved by Australian engineers and scientists.

The outbreak of war in 1939 was a signal for the development of many secondary industries in Australia, and these have owed much of their success to science—to scientific control for their maintenance, and to scientific research for their development. Besides the usual run of munitions of war—guns and their ammunition, armoured vehicles, tanks, aircraft and their engines—the author cites the manufacture of electrical equipment, the conversion of wool and cotton into textiles, lenses and optical instruments, paper, photographic materials, organic chemicals, paints, rubber products and plastics—"all these," writes Mr. Gresford, "are industries requiring the closest scientific control, and it is no exaggeration to claim that their establishment and successful development in Australia have been due in no small part to a realization of this." Practical examples are drawn from the story of the Australian paper industry.

In the later section of the paper the author describes the weaving of scientific effort in the Commonwealth to form one co-ordinated whole. He starts with the universities and technical colleges, and shows how important a part they play, not only in the training of scientific workers, but also in the actual undertaking of research work. He deplores the fact that it is the exception rather than the rule for Australian companies to have large research organizations of their own. But he claims, and justly, that "Government research is established on a very sound scale, and plans are being made for a considerable extension of its activities."

The principal research organization of the Commonwealth Government is the Council for Scientific and Industrial Research. Its policy is "to concentrate on problems common to one industry or group of industries requiring long-range research, and possibly not producing immediate results; whilst the more domestic *ad hoc* problems are considered to be the province of industry itself." The Council was instituted in 1926 by Federal Legislation. It is financed by Commonwealth Treasury grants, supplemented by substantial contributions from the benefiting industries, given

for specific purposes. It employs about 390 scientific officers. Its duties include "the initiation and prosecution of research into problems of the primary and secondary industries of Australia; the training of research workers; the foundation of industrial research studentships and scholarships; the testing and standardization of scientific apparatus and instruments; the making of grants in aid of pure scientific research; and the setting up of liaison between Australia and other countries in scientific matters."

The Council has its own laboratories and field stations. At Canberra are located the Divisions of Plant Industry and of Economic Entomology. The Division of Animal Health and Production has two laboratories, one in Melbourne and one at Sydney University, in addition to field stations. The Animal Nutrition Laboratory is maintained by the Division of Biochemistry and Nutrition in the grounds of Adelaide University. The Division of Soils works in close touch with the Waite Agricultural Research Institute of Adelaide University. Similar provision is made for Irrigation settlement investigations, for Forest Products research, with laboratory in Melbourne, for Food Preservation and Transport in Sydney and for Fisheries research at Cronulla, near Sydney. There is a National Standards Laboratory in the grounds of Sydney University and an Aeronautical Laboratory in Melbourne, where also is located the Division of Industrial Chemistry.

Problems yet to be solved include the synthetic production of liquid fuels from coal, since flow oil has never been discovered in Australia; and the question whether rubber can be successfully produced in Australia. Organic chemical industry has hardly been started and much work remains to be done on alkaloids and essential oils. An important conclusion drawn by Mr. Gresford from this survey is that: "Apart from the security aspect, the future prosperity of the country and its ability to support a much larger population depend largely on the development and balancing of its primary and secondary industries. Just as eternal

vigilance is the price of peace, constant research is the *sine qua non* of industrial development."

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SCIENCE (INTERNATIONAL COLLABORATION)

In turning from Mr. Gresford's paper (Chapter 7) to that of which Mr. Poole and Dr. Coop are joint authors (Chapter 8), we turn from an account of the national organization of scientific and industrial research in Australia to the international aspects of scientific and industrial research in New Zealand. The chief interest in this joint paper lies in the importance it attaches to the free flow and exchange of scientific knowledge the world over, as exemplified in scientific co-operation between New Zealand and the United Kingdom.

In his section, Mr. Poole describes the valuable results which followed from the visit in 1926 of Sir Frank Heath, then head of the Department of Scientific and Industrial Research of the United Kingdom Government, to New Zealand. The New Zealand Department of the same name was founded by Statute in 1927, and modelled on the British Department, with the difference that in New Zealand agricultural research plays a preponderating part in the work of the Department, whereas in the United Kingdom the Agricultural Research Council is separate. The New Zealand Department took charge of the permanent scientific services which had existed before—the Meteorological Office, the Dominion Laboratory, Geological Survey and Observatories. It formed institutes and branches to deal with research in fruit, dairying, animal production and health, entomology, social science, and many branches of plant life. It developed subsidized research in wool manufacture, leather and footwear, and adds to these from time to time.

Mr. Poole admits that with a population of 1,600,000 in a country a little larger than England, Scotland and Wales, scientific service cannot be so well equipped as it is in the more heavily

populated countries. And so the practice of co-operation has arisen. New Zealand had always looked to Britain as a source of training and recruitment of scientists for her Universities, and this has led the way to co-operation in scientific matters. Nor is it by any means a one-way traffic, for New Zealand scientists often visit the United Kingdom to study the latest scientific developments, and to exchange views and experience, to mutual benefit. The first overseas liaison officer of the New Zealand Department (Mr. Nevill Wright) was established in London when the Department was founded; and others have during the war of 1939-45 been appointed to Australia and to the United States jointly with Canada. The scientific liaison officer in London represents New Zealand on certain scientific bodies, such as the Imperial Agricultural Bureaux, the Food Investigation Board, and certain Research Associations of the British Department of Scientific and Industrial Research. He also keeps New Zealand fully acquainted with the work of a number of British research institutions, and during the war has kept in close touch with the scientific development work of the Ministry of Supply and other Ministries of the British Government. Special mention is also made of the food technologists of Australia "who, because of the similar nature of the trade of the two Dominions, have performed much excellent work in co-operation with New Zealand."

Examples are given of the results of these numerous contacts, in a new method developed by Mr. Nevill Wright, in co-operation with Dr. Hammon (of the Cambridge School of Agriculture) and others, of examining New Zealand frozen pork and bacon carcasses, a method since accepted internationally. Defects arising in connection with the transport of New Zealand fruit have been overcome. The chilled beef trade has been developed as a result of discoveries made at the Low Temperature Research Station. Plant research is of great importance for 95 per cent. of New Zealand's exports are derived from grass; and here special attention is paid to grassland research. There is a Grassland

Division of the Department of Scientific and Industrial Research, which has developed high yielding strains both of indigenous grasses and of the best European species. Breeding material is freely exchanged between the United Kingdom and New Zealand. Some of the Aberystwyth productions, e.g. S100 white clover, have New Zealand blood in them, and the reverse may be said of recent New Zealand introductions. In 1941, New Zealand participated, with much benefit, in the R.A.S.E. grassland trials laid down throughout England.

Other examples of useful liaison work are quoted under the heads of arable crops (the National Institute of Agricultural Botany, the Scottish Plant Breeding Society, and the Aberystwyth Plant Breeding Station), fruit research (East Malling, Long Ashton and the Low Temperature Research Station at Cambridge), linen flax—the last-named a very important war-time development, benefiting materially by new mechanical methods, such as the use of pulling machines, tank retting, turbine scutching, etc. The New Zealand liaison officer keeps in close touch with all such new developments as a result of his membership of the Linen Flax Committee of the Ministry of Supply, and his contacts with the Linen Industries Research Association of Belfast and with Scottish spinners. New Zealand has dehydration factories producing dried meat, vegetables, apples and butterfat, and works here in close touch with the Low Temperature Research Station at Cambridge.

The work of the New Zealand Dominion Laboratory is described, and work on bentonite, montana wax, refractories and ceramics and seaweeds (many of these various products in association with the Imperial Institute in London). Close touch is also maintained with the Imperial Parasitic Service in connection with insect parasite introductions into New Zealand and with the Bureau of Animal Population at Oxford in connection with rodent control.

Dr. Coop, concentrating on specialized research co-operation under war conditions, has naturally a difficult row to hoe, for

much of the information is still of a secret nature. But the story he tells us is no less interesting than that of peace-time developments. War-time collaboration between the Governments of the Empire was naturally an extension of pre-war collaboration in many fields. So far as New Zealand was concerned, the Department of Scientific and Industrial Research was made primarily responsible, with of course the collaboration of the Navy, Army, and Air Force of the Dominion. In 1939 and 1940, senior scientists of the Dominions were invited to the United Kingdom to see modern developments in war-time research, and the foundations were thus laid for scientific collaboration between New Zealand and Australia and the emergency Ministries of the United Kingdom. As a practical result, New Zealand was able to build a number of radiolocation sets of a type to meet the special conditions of the Dominion; this saved New Zealand from having to indent on the Mother Country for complete sets.

In 1941, a New Zealand scientist was posted to London to act as liaison officer in regard to war-time research. He was able to collect information and despatch it to his own country and also to answer technical enquiries from his own Government. This task was greatly facilitated by numerous visits to war-time research organizations in the United Kingdom.

At the same time, says Dr. Coop, "the scientific resources of New Zealand were mobilized and development and production put in hand. The major scientific development undertaken in New Zealand was in radar, and to this end the Radio Development Laboratory was set up. This laboratory was responsible for the development of prototype radar and radio equipment; and because of the easier interchange between small organizations in a small country, experts from the laboratory were able to assist in the manufacture of the equipment and in its subsequent operation against the enemy. At the four university colleges constituting the University of New Zealand, extra-mural development work was done in engineering, radio, optics; chemical warfare and other subjects, all of which was under the

direction of the Department of Scientific and Industrial Research. A contribution was also made by New Zealand scientists in the fitting and repair of complex scientific equipment being installed or used by the Services."

The practical result was that, during many of the operations in the Pacific, considerable equipment was used which had been developed and produced in New Zealand. *Per contra*, the experience gained from tropical warfare in the Pacific enabled the Dominion and particularly Australia to furnish the United Kingdom with valuable scientific information. Again, a number of ionospheric recording stations were set up in New Zealand providing information of value to the United Kingdom, the United States and Australia in forecasting the optimum conditions of radio communication.

Dr. Coop concludes that the closeness of co-operation between his own country and this country has been largely due to the personal touch—the number of specialists sent from here to New Zealand to advise that Government and its Services on technical matters—equalled or exceeded by the considerable number of New Zealanders, scientific and technical men who are to be found in every Ministry and University in this country. Here is co-operation indeed, and on lines of great mutual advantage to both countries.

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EXPLORATION AND DEVELOPMENT

Dr. Camsell's paper entitled "Canada's New North" (Chapter 6), falls naturally under the head of Exploration and Development. There is a link, however, with the New Zealand papers on International Scientific Co-operation (Chapter 8) in the fact that the recent development of Canada's North-West territories is an outstanding example of co-operation between two great partners of the North American Continent. Before the war the Alaska and Yukon territory had been practically inaccessible

except by water along the Pacific coast. Some preliminary surveys had been made by both Canada and the United States and airplane travel had been developed by routes from Edmonton northwards into the Mackenzie basin, and again to Whitehorse and Dawson in Yukon territory. After the outbreak of war the Canadian Government extended airplane facilities to the Yukon by building a series of airports, the first route in the whole of the northern territories over which land planes could be used.

That was a strictly Canadian undertaking. It was after the Japanese attack on Pearl Harbour that both Canada and the United States suddenly awoke to the threat to their sovereignty in the North Pacific region. An agreement was consequently made between Canada and the United States for the construction of a military road known as the Alaskan Military Highway, from the end of the railway at Dawson Creek, British Columbia, to Fairbanks, Alaska. Construction was begun in March, 1942, and in eight months' time the road was officially opened for traffic. At the same time other undertakings such as the Canol Project were started, including oil developments in the Lower Mackenzie, a pipe-line west to Whitehorse, landing-fields between Edmonton and Norman Wells, and a number of winter roads.

Collaboration between Canada and the United States has throughout been close, and the work was carried out under the auspices of Joint Economic Committees organized by both Governments and working in close co-operation with the Governments of Alberta and British Columbia. The territory which came under this study is approximately 1,360,000 square miles, more than half of which lies in Canada; it is inhabited by less than 100,000 people, of whom the greater number is in Alaska. A map of the whole area (p. 169) illustrates the descriptions which follow.

The Southern boundary of the area follows Lat. 53° N. The Eastern boundary follows the broad valleys of the Athabasca, Slave and Mackenzie Rivers. Dr. Camsell writes: "Within these

boundaries lies some of Canada's finest virgin territory, more varied in its resources than most of the unsettled country to the east of it, and, because most of it comes within the influence of warm winds from the Pacific, less rigorous in its climate." Indeed, in spite of the fact of the northerly position of these territories, the proximity of the Pacific has a moderating effect on temperatures so that the mean temperature is about 30° warmer than that portion of Siberia with the same relative situation. Temperatures exceeding 90° or even 95° occur during the short summer; but by way of compensation the long period of sunlight with scarcely any darkness encourages the extremely rapid growth of native grasses and plants; and wheat can be grown successfully. "Through this great region before the coming of the airplane or the building of the highway the principal lines of travel were along its rivers, mainly the Mackenzie and the Yukon, first of all by canoe and York boat, and during the last fifty years by steamboat. To-day the airplane is the dominant method of transport for passengers."

Over the last fifty or sixty years the economic resources of these territories have been explored, but much of the country is still unknown, much less developed. Great efforts have, however, been made during the past two seasons, and these efforts have been concentrated along the line of the Alcan Highway and the Canol pipe-line. Geological parties have extended their activities northwards and eastwards; soil and grazing specialists from Canada's Department of Agriculture have traversed the whole Highway and are also exploring the Mackenzie Valley; biological, botanical and forestry specialists with experts in fisheries have contributed towards the general pool of knowledge now gradually coming to light; whilst water-power engineers and transport engineers have joined also in the investigations, the results of which are being analysed.

And now with regard to these results. Before 1939 the developments which had occurred in these territories had been practically confined to mineral resources—gold in the Yukon in 1897, oil

at Norman in 1921, gold at Yellowknife and radium at Great Bear Lake (the last two within the decade preceding 1939). Now, as Dr. Camsell writes, "the North-West has burst into new life, and Canadians are beginning to realize that here is a part of their national heritage which may have vast potentialities and which may offer to those of British stock possessed of the pioneer spirit an outlet for their energies when this war is over." Since those words were written the war has closed down, and the stage is set for further advances.

Besides the pre-war developments there have now been discoveries of placer gold in Cariboo, Omineca, Atlin and Klondyke, besides mercury, copper, silver, tungsten and coal in the mountains. Last summer a variety of rare minerals was discovered in the pre-Cambrian area, and there still remain great areas throughout the mountains generally with promise of success to prospectors in metallic minerals; and for oil along the eastern edge of the mountains and on the Lower Mackenzie. The bituminous sands of the Athabasca fields are well known, and indeed the petroleum resources offer the greatest opportunity for early development and for increase of population.

Again, the agricultural possibilities of the territory are substantial. It is true that conditions appear unpromising—early frosts in some areas and drought in others—but these difficulties may be overcome by the breeding of new varieties of grain. About 15 million acres of virgin arable land are available in Canada's new North-West, and one-third of this area is serviced by existing railroads. Here again there are handicaps in the wooded character of much of this land; but, as Dr. Camsell points out, the result will be all to the good if it encourages orderly settlement based on soil surveys. The greatest expansion is likely to take place earliest in the Peace River Basin, although other smaller areas have also been noted for development.

The forest resources are immense, though scattered over an immense area and varying greatly in economic value. It has been estimated that the coastal area is capable of producing 240 million

board feet annually, and that the forests of the interior have a huge annual growth, of which, however, only a proportion is at present accessible. A great deal of small timber is also available and the prospects of the fur industry are promising. Finally, the country is well supplied with resources of coal, oil and running water for the production of power.

Dr. Camsell concludes that the mineral resources of the new North-West are of prime importance in the opening-up of these territories and will constitute "the spearhead of development"; and that agriculture and other primary industries will follow wherever conditions are favourable. Almost an equal attraction will be what Dr. Camsell picturesquely calls "the insistent lure of the North," which will shortly become accessible by air travel. "There is something inherent in the human heart and the human soul which responds to the appeal of the Wilderness and which no other appeal can satisfy. Here then lies the greatest unspoiled recreation land on the Canadian continent to-day. . . . Just as the map of Canada has for a century been unrolled westwards, so now it is northwards that the tide of Empire takes its way."

Thus the days of exploration and discovery are not yet over. There are still quite considerable corners of the globe of which only the bare outlines are known. Their economic development awaits the application of scientific acumen, such as Dr. Camsell and his fellow-workers are applying successfully to Canada's northern territories.

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CAPITAL (AND COLONIES)

Lord Hailey's paper on "Capital and Colonies" (Chapter 3) deals with the part played by capital in the development of Colonial territories. Contrasting the views of J. A. Hobson on the one hand, and of Karl Marx and Lenin on the other, he reminds his audience that Imperial expansion has not necessarily

been overseas expansion, and that Russia, China and the United States have all three from time to time expanded imperially by the simple process of extending their land frontiers. So far, however, as overseas expansion is concerned, many Colonies were acquired in a pre-capitalistic period, and some for reasons purely strategic. Although it is perhaps more true to say that the flag followed the trader, than that trade followed the flag, it is equally true that the expansion of colonial territories has often been due to genuine humanitarian or civilizing motives.

Again, the Colonies are not distinguished by any exclusive or even exceptional interest on the part of the British capitalist, who has from time to time found larger scope for investment in areas beyond British control; and here Lord Hailey cites the United States, Brazil and the Argentine as examples of foreign fields for British investment. Indeed, the Dominions have absorbed more British capital than the Colonies—so much so that the private investments in the Colonies probably do not exceed 7 or 8 per cent. of the total of British overseas investments.

Be that as it may, "for us, at all events, the age of acquisition has passed. If anything can now impel us to the expansion of territory, it certainly will not be the prompting of the capitalist or the monopolist." This does not mean that the use of capital is no longer a matter of concern to us. It is a matter of concern, partly because of the controversies which rage around the employment of capital as a part of Colonial policy, and still more because the whole subject is one which demands clear and constructive thinking. "We now have a definite objective before us—the ideal of Colonial self-government—and all our thinking on social and economic problems must be directed to organizing the life of Colonial communities to fit them for that end." Social advance is a condition precedent to self-government, and economic advance must be directed to a raising of the general standard of living of native populations, and to the ultimate creation of that economic independence without which self-government is an unreality.

How far is the use of capital a possible element in the exploitation of Colonial peoples, and what do we really mean by "exploitation"? Here Lord Hailey invites attention to the distinction which Professor Hancock has drawn between the exploitation of natural resources and that of human beings; the former must be judged by standards which are economic, not moral, and the latter by standards which are primarily moral.

At this point Lord Hailey examines various kinds of exploitation, in five groups:

- (a) Where the resources of a Colony directly benefit the sovereign country—this may be either through the allocation of some proceeds of Colonial taxation or else the use of compulsion for the production of certain minerals or export crops.
- (b) Where trade discrimination is applied to secure preferential treatment for the sovereign power, the result of which may prejudice the interests of the Colonial population, e.g. by the development of a tariff policy favouring home manufacturers.
- (c) Where methods of compulsion are used to secure labour under improper conditions for public works or utility schemes.
- (d) Where monopolies or concessions have been given to foreign enterprise enabling it to secure native labour or to appropriate native production or to evade obligations towards the revenues of the Colony; or again to recruit or employ labour on terms contrary to humanitarian principles.
- (e) Where native lands are alienated to the prejudice of native populations.

As Lord Hailey points out, "the list is a formidable one, but as you will realize my illustrations have been drawn from a wider area than the British Colonies, and many belong to a period which is now happily past. . . . I must, then, proceed from the general to the particular, and attempt to distinguish those uses of

capital which are necessary and beneficial from those which can be described as partaking of exploitation." In this connection it is necessary to consider the conditions of the Colonies before they came under a metropolitan power. Their mineral deposits were unexploited; their agricultural production consisted mainly of "subsistence" crops providing no surplus income towards State revenues; communications and other public works were non-existent; above all, the spirit of individual enterprise was generally absent. In these circumstances the first task of the sovereign power was the construction of roads and other public works, the mobilizing of mineral and agricultural assets and the creation of educational and welfare services. Only by these means could individual enterprise be encouraged and capital resources built up. The solution of this problem lay in the application of outside capital to the development of mining enterprise and the export of surplus agricultural products. By this means, as Lord Hailey points out, "the hospitals and schools of Malaya have in truth been the creation of its tin and rubber industries; the social services of Northern Rhodesia depend mainly on the profits of the copper mines, and those of the Gold Coast on the organization of the trade in cocoa, and on the profits of its gold and (more recently) its diamond mines. It is a general experience that the standards of native life tend to be highest in areas which have seen the largest introduction of outside capital."

The crucial point is whether these developments should properly have been undertaken by the State or left to private enterprise? In the early days of British Colonial expansion the doctrine of *laissez faire* was widely held, and the Home Government felt no direct responsibility for contributing to expenditure on Colonial development. Hence public expenditure for capital purposes in the Colonies has been far from considerable, and is to-day perhaps only in the range of £120 million of which perhaps five-sixths was devoted to the construction of railways and ports. This calculation takes no account of loans already paid off but represents public advances still outstanding. It will

be generally agreed that it would have been to the benefit of the Colonies had Government capital been applied to Colonial developments on a more liberal scale; and Lord Hailey notes that the Executive of the British Labour Party proposed in 1943 that the United Kingdom should make liberal grants of interest-free loans by way of assistance to Colonial development, as a supplement to the assistance given in outright grants under the Colonial Development and Welfare Act of 1940. As against this consideration may be set the fact that Colonial loans raised in the open markets of this country have been obtained on far better terms than those secured by many foreign States.

A further question is whether the State has used its capital resources for the direct promotion of industrial or agricultural development? Or have foreign capital enterprise and the export trade been favoured? The answer is that official capital was naturally applied to types of development calculated to produce returns which would meet the interest charges on the debt and also if possible add to the sources available for local taxation. The service of mining areas and the transport of export production are quoted as examples of such expenditure, with the rider that "export trade cannot be described as a non-native interest . . . it only ceases to be a native interest at the point at which it absorbs activity or diverts services which should properly be devoted to nutritional production or the promotion of internal trade."

Only rarely, however, have the Colonial Governments given direct assistance to industrial developments; the Nigerian coal mines and the working of the potash deposits in Nauru are quoted as examples. But is it to the best interests of the Colony that these activities should be undertaken by the State? Neither the official establishments nor the resources of the Colonies are adapted to this function. The service of the State debt would create vast charges which would have to be met whatever returns the investment might give; and the native population might at times be compelled to export twice or thrice the

amount of produce necessary to satisfy the obligation in normal years, in cases where the capital is raised abroad. In this respect the investment of private capital offers a definite advantage.

The experience of the various Colonial Powers is, of course, different in a matter of this kind; for example, the Belgian State has directly participated in almost every aspect of the industrial development of the Belgian Congo. British official intervention has been slower and is likely to be limited to a closer concern with the conditions in which private capital operates.

In this connection the most important development should be the progressive substitution of domestic for outside capital. It has been estimated that British private capital invested in the British Colonies is in the order of £250 to £260 million; but private money brought in by settlers or private firms and profits ploughed back into business are not included in that figure. Mining has provided the strongest stimulus to the investment of external capital, and it is said by Professor S. H. Frankel that of the capital invested from abroad in Africa, no less than 66 per cent. has found its way into mining territories. A good deal of outside capital has been applied to plantation developments, chiefly in Malaya and Ceylon. Lord Hailey estimates that of the private investments possibly some 90 per cent. represents external capital, predominantly British in origin. He goes on to explain that foreign borrowing has been the ladder by which more than one country has climbed to economic independence; and quotes the Dominions as perhaps the most notable modern instances—but these are countries which are able to safeguard themselves against political interference by the creditor. In any case, if our ideal of self-government for the Colonies means anything we must work consciously towards a position in which they will be less dependent than at present on the supply of capital from this country. That will be a long process; and Lord Hailey aptly quotes in this connection the experience of India which has only recently achieved her independence of external capital.

Linked with this objective is a second, namely, that so long

as outside capital is employed it must operate under conditions most beneficial to the Colonial peoples. There have been grievous abuses in the past, from the days of the slave-trade and the Congo concessions onwards, but there is no suggestion that abuses so gross still persist. At the same time exaggerated ideas have been drawn from high rates of interest paid in particular instances as rewards to external investors. Allowance should, of course, be made for the many losses incurred and also for the fact that much of the capital, particularly that employed in mining, is developing wasting assets. Some interesting examples are given of average dividends paid by the Rand mines, by the British South Africa Co., by the British North Borneo Co., and by the Northern Rhodesia copper mining companies. Where investments are speculative in character, "it is the prospect of the occasional prize which mainly influences the flow of capital." Our main concern is to see that profits are not earned by the exploitation of human resources; that they do not involve a misuse of natural resources; and that they make an adequate return to the revenues of the Colony.

On the latter question Lord Hailey would apply the test whereby conditions of employment should permit "of a reasonable improvement over the usual standards of native life." To remunerate a relatively small class of the whole population, out of all proportion to general standards, would be no gain to the social structure. It would be better to collect part of excess profits by taxation and make the money available for the benefit of the community at large. Certainly during recent years active steps have been taken in the interests of Colonial Labour and in many instances private enterprise has effected great improvements in the diet and housing of employees. Much yet remains to be done, but the accepted policy is to proceed steadily towards improved housing and health conditions, minimum scales of pay and the removal of colour discrimination.

On the question of securing for the benefit of the community at large a proper proportion of the profits of private enterprise,

Lord Hailey has valuable suggestions to offer. He draws attention in particular to recent legislation adopted by the Union Government of South Africa whereby the State becomes a partner in the equities of private enterprise—legislation of which a more detailed account is given in Chapter 9. Again, the State may adopt the system of dead rents or royalties, either fixed or depending on out-turn or on profits, or it can take a share of the profits by direct taxation. With regard to mineral deposits, recent developments aim at securing mineral rights to the State. With few exceptions all Colonies now have an income tax, and in some cases the rates payable by companies run as high as 7s. 6d. or even 10s. in the pound.

In conclusion, Lord Hailey suggests that "the whole question of the methods by which a Colony should obtain an appropriate share of the profits of private enterprise must now come under review . . . in a realistic spirit, and with a due sense of discrimination between moral and economic issues. Our primary consideration must, of course, be the welfare of the Colony and not the interests of the investor. But so long as the welfare of the Colony continues to demand the use of foreign capital, we must be careful to avoid measures which might dry up the source from which it comes. The capitalist has obligations towards the labour he employs and the society to which it belongs. The administration has an obligation to safeguard the interests of that society, and the financial resources of the Colony." Our duty will be to see that these obligations are adequately discharged on both sides and to prepare for the day when Colonies will become more independent of the supply of external capital.

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LABOUR (AND INDIA)

Most of the Chapters in this volume follow a general and more or less uniform pattern. They survey the facts, deduce the problems latent in the facts and then indicate the possible or

probable solutions to the problems; and it is the solutions thus indicated which reveal the objectives underlying policy. Chapter 10, however, provides an exception for in it Sir Frank Noyce describes definite achievements accomplished by "Recent Labour Legislation in India," and by this method indicates objectives already realized, whilst at the same time he shows what further objectives remain. The policy throughout is clear—one of improvements to labour conditions in India—and the very fact that definite progress has been made towards this goal is by no means inconsistent with the conclusion that further improvements are desirable and in some cases urgently necessary.

Early in this Chapter, Sir Frank summarizes the general background against which Indian labour legislation has been passed—the predominance of the agricultural population—the struggle of the peasant for a livelihood, compelling him to seek city or town employment, from which he is always glad to escape back to village life—the importance of three outstanding industries, the jute textile industry, the cotton textile industry, and the metal and engineering works—the prevalence of the seasonal factory engaged in the processing of crops such as tea and coffee, sugar cane, rubber and ground-nuts. Before the war there were, in all, in India about 5,000 perennial factories employing some 1,300,000 workers, supplemented by 3,700 seasonal factories employing some 300,000 workers. Of the perennial workers about half are employed in or near the two great industrial centres of Calcutta and Bombay.

Against this background must be set the fact that India has always been a keen and a co-operative member of the International Labour Office, and that the Indian Government have done far more than most other member-Governments to give practical effect, by legislative action, to recommendations adopted by the I.L.O. One of the earliest examples of this anxiety to improve working conditions in India was the passing of the Factories Act of 1922, which, in prescribing a working week of sixty hours maximum, with a daily limit of eleven

hours, brought Indian practice into line with the decisions of the International Labour Conference (Washington) of 1919. In terms of this Act, moreover, a weekly holiday became obligatory; nightwork by women was prohibited; and children's work was limited to six hours a day. Another example was afforded by the appointment in 1929 of a Royal Commission under the capable chairmanship of the Rt. Hon. J. H. Whitley to examine the conditions of labour in industrial undertakings and plantations of British India. The report of this Commission inspired much subsequent action for the betterment of India's working-classes.

In 1934 the Factories Act was entirely recast. In perennial factories, the hours were reduced to fifty-four in the week with a daily limit of ten. In seasonal factories the weekly and daily limits remained at sixty and eleven hours respectively, but the daily limit for women was reduced to ten hours. In both classes of factories the daily working hours for children were reduced to five. No woman or child was to work between 7 p.m. and 6 a.m. A new class of worker, the "adolescent" of 15 or 16 years of age, was introduced, who could only be employed as an adult under medical certificate. Provincial Governments were empowered to prescribe the physical standards for children and adolescents; to insist on the provision of *crèches*, first-aid facilities and rest-rooms; and to prohibit the employment of women and children in dangerous occupations.

The 1934 Act went much further than its predecessors in several important respects—in provisions for the safety of workers and for their protection against occupational risks. The penalties for certain offences were substantially increased. An important Factories Amendment Act of 1945 (to come into operation on January 1st, 1946) enforces paid holidays for all factory workers—ten days for adults and fourteen for children—more generous terms than the six days for all workers adopted by the International Labour Conference of 1936. Mention should also be made of the Weekly Holidays Act of 1942, which gives Local Governments power to prescribe weekly holidays and

half holidays for certain classes of workers, and to collect industrial statistics. The qualification noticed by Sir Atul Chatterjee, however, of the value of permissive powers granted to Local Governments, as quoted by Sir Frank in the postscript concluding this Chapter, is important.

Sir Frank next deals with the Indian Mines (Amendment) Act of 1935, which, like the Factories Act of the previous year, effected "a substantial reduction in hours of work." Above ground, the maximum number of hours was reduced from sixty to fifty-four per week, whilst below ground the daily maximum of nine hours was transferred from the individual to the relay or shift, thus including in the hours of work the time occupied in reaching and leaving the seam or work-face. The age limit for children was raised from thirteen to fifteen, and provision was made, as in the Factories Act, for adolescents. No provision was necessary in the Mines Act of 1935 for women's work in mines because the Mines Act of 1928 had already provided for a gradual reduction of women's employment in mines, so that complete abolition (since temporarily abrogated as a war measure) was secured by 1936, two years earlier than the stipulated final year for such employment. Two further Mines Acts, of 1936 and 1937, dealt with the growing risks arising from explosions and fires, and empowered the Government of India to issue temporary and urgent regulations relating to safety in mines. A Mines Maternity Benefit Act was passed in 1941. Its scope was enlarged in 1945 to meet the conditions arising out of the lifting of the ban on the underground employment of women in coal mines.

With regard to the recruitment of labour for tea districts, Sir Frank shows how necessary had been the initiation of measures to prevent abuses arising from the long distances from which recruitment was necessary and the high rewards at stake; and indicates that legislation with this object in view was of long standing in India, dating actually from 1863. The Tea Districts Emigrant Labour Act of 1932 reduced the control of recruitment

to the minimum necessary to prevent abuses, and introduced measures to safeguard the health of the workers, to ensure an enforceable right to repatriation and to punish offences.

After describing the Indian Dock Labourers Act of 1934, which provided for safety measures to be taken in docks and for the reporting of accidents, Sir Frank Noyce turns to an account of Indian Acts of general application to industry. The first Workmen's Compensation Act had been passed in 1928. In 1933 its scope was greatly enlarged, widening the classes of labour which the earlier Act had covered and adding new classes; the scales of compensation were substantially increased, and care was taken to ensure that both the workers and their dependants were made fully aware of their rights.

The Payment of Wages Act of 1935 broke entirely new ground in India. It regulated the system of fines which had been the usual method of ensuring discipline, particularly in perennial factories and on the railways. Wages in India are commonly fixed on a monthly basis, and the Act prohibits payments of wages more than seven days after the end of the month, and also prohibits all payments in kind. The Act does, however, authorize the employer to deal with the "stay-in" strike by withholding pay from workers who, though present, unreasonably refuse to work. On the general working of the Act, Sir Frank points out that certain practices have crept in to circumvent its effects and that the Act already needs considerable tightening up.

The indebtedness of the Indian labourer is also dealt with under this head. Sir Frank writes that "the Labour Commission estimated that two-thirds of all industrial workers are in debt, most of them for a sum exceeding three months' wages. On those debts the rate of interest usually charged is one anna in the rupee per month or 75 per cent. per annum." A brief Act of 1936 abolished imprisonment for debt except where recalcitrance or fraud could be proved. A second Act, of 1937, severely limited the recovery of debts through employers. The Labour Commission had reported an evil prevalent especially in

Amritsar carpet workshops, whereby parents or guardians pledged in advance the labour of young children. This was prohibited by an Act of 1932.

After a brief account of Maternity Benefits and other labour enactments adopted by the Provincial Governments of India during this period, Sir Frank goes on to assert, with no little reason, that by the time the introduction of provincial autonomy had transferred to those Governments much of the responsibility for labour legislation, they found that the Central Government had provided them "with very solid foundations on which to build," and he proceeds to show that some of the Provinces were not slow in setting wholeheartedly about the task of improving the lot of the industrial worker.

The first example quoted is that of Bombay legislation for the settlement of trade disputes. In 1928 a central Trade Disputes Act had been passed, but its provisions had proved inadequate, and even an amending Act of 1939 had had little effect. The evil was real, for in 1938 there had been 399 disputes involving over 400,000 workers. The Trade Disputes Conciliation Act passed by the Bombay Legislature in 1934, was comprehensive and far-reaching. Its object was to ensure the redress of workers' grievances with as little delay as possible. To this end, it provided elaborate machinery—a Registrar of Unions, Conciliation Officers, Labour Officers, Boards of Conciliation, Arbitrators, and, at the apex, an Industrial Court. Workers cannot be compelled to join a trade union, but an encouraging feature is that where a majority of employees belong to a registered union, or where some belong to a representative union, all negotiations are conducted between the employers and the union.

The same Act enjoins employers to prepare and notify (subject to official approval, registration and if necessary appeal) standing orders which explain classification of labour, hours of work, wages, leave and holidays, termination or suspension of employment, dismissal, and means of redress. Again, should any dispute arise, the Conciliation Officer tries to bring about agreement.

and if he fails a Board of Conciliation may be appointed or else arbitration proceedings set on foot. During the negotiations, strikes and lock-outs are alike illegal. This Act, although a valuable contribution to Bombay labour conditions, has hitherto only partially succeeded in its objects, and, as Sir Frank records, did not prevent a general strike in the Bombay textile industry between March 3rd and April 12th, 1940.

The Bombay Government has also led the way by legislating to control hours of work in shops, hotels, restaurants and places of entertainment and in commercial establishments. In certain areas it has prohibited the employment of children under twelve and has restricted to a daily maximum of eight the hours of work for young workers between the ages of thirteen and seventeen. Other Provincial Governments have been less active in the cause of labour legislation.

To revert to the Central Government, which has powers of legislation on labour questions concurrent with those of the local Governments, the Employment of Children Acts of 1938 and 1939 raise the minimum age for the employment of children in docks or in the transport of passengers, goods or mail from twelve to fifteen and herein exceed by one year the minimum of fourteen years proposed by the Labour Commission and by the International Labour Convention of 1937. The employment of children under twelve is also prohibited in a wide range of specified occupations. Various amending Acts have also been passed by the Government of India clearing up doubtful points in earlier legislation. In parenthesis it is noted that the more important Indian States have followed the example of British India and introduced their own enactments towards the solution of local labour problems (see Note 2, pp. 254-9).

Sir Frank concludes his interesting survey with a summary of certain gaps which still remain to be filled. As he justly comments, "Experience at Geneva has shown how numerous are the crevices which have still to be filled in before the demands of social justice can be considered to have been adequately met even

in the most advanced Western countries." So also in India much yet remains to be done. The regulation of children's employment is particularly difficult in the innumerable small workshops of India, where conditions are still deplorable. All the same, Local Governments have since 1934 had the power to extend parts of the Factories Act to any manufacturing establishment employing ten or more persons. Previously, either the whole Act had to be extended, or none of it. Here again the Bombay Government has led the way.

Two other gaps, the closing of which is under active consideration by the Government of India, are due to the absence from India of legislation dealing with sickness and unemployment insurance. Experimental schemes of sickness insurance are in existence, but the few which exist merely touch the fringe of the problem. So also with unemployment insurance. With regard to minimum wages, Mr. Harold Butler, after his visit to India, reported that even if industrial wages alone could by this means be raised, the agricultural population, on its bare level of subsistence, would not be able to afford the resulting rise in the prices for goods of local manufacture.

But the most important question of all is, of course, the translation of Acts into action. For this a strong inspection staff is necessary in each Province. Sir Frank looks forward to the day when financial and political obstacles to progress will both be removed and when "the Provincial Governments will then be able once more to co-operate with the Central Government in efforts to eradicate the four great evils which afflict the Indian worker, poverty, illiteracy, ill-health and insecurity."

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EDUCATION (EAST AND WEST AFRICA)

On the question of Education, the Rev. H. M. Grace (Chapter 12) has much of importance to say in relation to East and West Africa. The foundations of educational progress were laid only

eighty years ago in the former territories and only sixty in the latter, and the Church has throughout taken an active part in promoting education, so that at the present day 90 per cent. of all the schools in the whole area under survey are Church schools. Government control, exercised through Directors of Education, subsidizes and inspects these schools, reserving for its own direct administration the schools for Moslems as well as higher colleges and vocational institutions. Still further educational activities are foreshadowed as the principle underlying the Colonial Development and Welfare Acts of 1940 and 1945 acquires practical application—the principle that the sovereign power cannot leave local development to sink or swim with local finances but must itself undertake part at least of the finance. As Mr. Grace happily phrases it, “No Empire can be healthy and strong and progressive which has depressed areas; these are a liability and must be liquidated.”

There follows an illuminating survey, and comparison, of social conditions and educational needs in West and East Africa, taking the Gold Coast and Uganda as the two outstanding examples. Mr. Grace is of the opinion that, thanks to the vision and statesmanship of Bishop Tucker and other pioneers, both missionary and official, the principle of Indirect Rule was first established in Uganda, and later made popular by Lord Lugard in Nigeria, and by Sir Donald Cameron in Tanganyika. “Uganda is, without doubt, the most prosperous—in the best sense—and most peaceful country in British tropical Africa, and there is no reason why it should not remain so if the Church and State are able to continue to work together in the education of the people, while gradually throwing more and more authority on the native peoples.”

The educational work of the missionaries in Uganda has been amazing; one of its most important achievements has been the sublimation of indigenous custom and practice. Old burial and marriage rites were not destroyed, but “enlightened and purified.” The old system of a graded hierarchy of chiefs was used

by the Church as the basis of her own hierarchy, from the humble village teacher to the more enlightened priest—himself often a chief who had given up his chieftainship to be ordained. This hierarchy was infused with the “presbytery” idea, that of a body of elected counsellors chosen by the people to guide the decisions of the Church. From the bush schools, with their powerful communal influence, to girls’ schools, boarding schools for boys, vocational schools (carpentry, building, printing, metalwork, agricultural), medical training and teacher-training, the new culture was disseminated throughout each community. So also the State used the hierarchy of the chiefs, but tempered it by adding a certain measure of popular government, “so that the tyranny which was such a curse in the old régime was curtailed right from the start.” New bottles had been provided for the new wine.

The story of educational progress in the Gold Coast was different. It starts with missionary enterprise in the early nineteenth century, but was usually limited to the coastal areas where the slave-trade had broken up the tribal systems, leaving little or no communal organization on which to build. The missionaries began by opening schools for children; and Christian communities gradually developed, but they had not their foundation in the tribal systems of the country—they were foreign bodies, and between the schools and the tribal communities there was, and is still, a formidable gap.

To-day there are many excellent schools in the Gold Coast, primary and secondary, and in Achimota (originally founded on the initiative of General Guggisberg for the development of the spirit of leadership) is to be found “the most highly-developed secondary education in tropical Africa.” But the mass of the people are still animistic and illiterate, untouched or little touched by the urge towards the new culture.

Mr. Grace draws attention to two dangers which are common to both West and East Africa: (a) the overburdening of the curricula with academic subjects, and (b) the small number of

girls being educated in comparison with the boys. Both dangers had been brought to light by the Phelps-Stokes Commissions of 1921 and 1924.

On the first point, the tendency towards a literary bias in education, the explanation seems to lie in the strength of the original demands made by both the State and by commerce for more and yet more African clerks. To these demands there has been a great and popular response, with the result that the balance between an agricultural or artisan training on the one hand and a clerical training on the other, has been upset in favour of the latter. It is difficult here to follow Mr. Grace's argument that "so long as the great democracies follow a policy aimed primarily at securing their minerals, their cocoa, coffee and vegetable oils cheap, so long will the African be unable to develop his land at a reasonable profit on the export crops he sells." No artificial raising of prices can be long maintained in face of the natural demands on the part of world-consumers for cheap raw materials and foodstuffs. Nor can unskilled or semi-skilled labour successfully demand the wage-rates of skilled labour. The proper answer to the conundrum is surely twofold: to improve by an effective examination system the quality, and reduce the quantity, of the aspirants to clerical posts, and at the same time to improve the quality of the agricultural product by raising the standard of agricultural training. There is little doubt that agricultural research has still many devices up its sleeve for improvements to the qualities of African cash crops and of consumption crops as well; and that a sound agricultural training is essential to ensure full advantage being taken of these improvements, with favourable results both to the quality and price of the products. In his paper, Mr. Grace does recognize the importance of the application of scientific method, and that "a healthy rural economy will improve all living conditions." The problem of low rates of wages for Colonial Labour is also dealt with by Lord Hailey in Chapter 3.

On the second point, the education of girls, the missionaries

have been hampered by local tradition. The chiefs recognized that boys must be educated, for with the cessation of inter-tribal warfare the boys must learn the arts of peace. Mr. Grace quotes Dr. Aggrey, who was a member of both Phelps-Stokes Commissions and who attached great importance to female education, as saying: "When you educate a boy you educate an individual; when you educate a girl you educate a family." He is of the opinion that although only half as many girls as boys are being educated in Uganda and the Gold Coast to-day, still "there is a great urge for this to be altered—and not least from the educated young African men themselves, who desire educated wives."

In conclusion, Mr. Grace emphasizes the need for new techniques to give the rising generations of Africans the education they require, to enable them to overcome the dangers of magic and insanitary rites and to learn the hard lessons of science. The travelling cinema, the wireless and other aids to education must be employed, and the structure built up to university standards. He draws an interesting comparison between education in Britain and in Africa and stresses the importance of education becoming more "community-centred." In this regard "there is something we can learn from the growth of education in certain parts of Africa, which would help to make education more the concern of society as a whole here in our own country." It is to be hoped that the report (Cmd. 6655) of the Commission on Higher Education in West Africa, will lead to the realization of some of the objectives which Mr. Grace has in view for West African education.

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CULTURAL RELATIONS

Chapters 4 and 5 deal with Cultural Relationships within the Empire. In the earlier chapter, Sir Angus Gillan describes the policy of the British Council in its projection of Great Britain on the Colonial Empire; in the latter, Mr. F. H. Andrews

describes the converse, the measures necessary to strengthen the projection of Oriental culture on London.

The work of the British Council in making our country better known in foreign lands and to foreign audiences has attracted much attention and approval both here and abroad. A task of equal importance is that of telling the story of Britain, its achievements and its aims and objects, to the peoples of the Overseas Empire, and more especially to those peoples of the Colonial Empire to whom British thought and culture are foreign.

Actually the projection of Great Britain on the Colonies has been going on for many years, for it is "an inevitable concomitant of the imperial connection." Every person of British descent has tended to carry with him, consciously or unconsciously, the traditions to which he was born; and by his fruits he was known. All the same, there was a certain lack of imagination in this unplanned, and therefore not consciously directed, influence. That the influence was felt, and that it was all to the good, is not denied; and Sir Angus pays a tribute to earlier generations of Empire-builders who had laid just and wise foundations of British rule in backward territories. But "the need for a more deliberate and planned interpretation abroad of what we believe that Britain stands for is a comparatively recent realization. . . . We are apt to forget that as we give education, as we enlarge the horizon of the more backward peoples, we cannot expect them indefinitely to take for granted the benevolence of our mission. . . . We must give them a share in it, and we must demonstrate clearly and without condescension the rational and spiritual advantages of the British connection."

Sir Angus claims that there is a new vision abroad in the work and spirit of the Colonial administrations and of the Colonial Office. It is vitally necessary to create, not merely a wise and efficient administrative machine, but still more "a fuller and wider understanding of the British way of life and of the spiritual and cultural value of the British connection." This is a task which

can and should be carried on in co-operation with the administration, and indeed with any and every other sectional agency of goodwill. But it can best be inspired, planned and co-ordinated independently of the inhibitions of officialdom and of the stresses of vested interests.

He then describes the origin and methods of the British Council. It is non-political, non-sectarian, non-commercial. It is not a Government body, though it enjoys the moral and financial support of His Majesty's Government. It was called into being in 1934 on the initiative of the Foreign Office, and under the terms of its Royal Charter it exists "for the purpose of promoting a wider knowledge of the United Kingdom of Great Britain and Northern Ireland and the English language abroad and developing closer cultural relations between the United Kingdom and other countries for the purpose of benefiting the British Commonwealth of Nations."

In all this there is no attempt to introduce a New Order or a Co-prosperity Sphere. The British Council very wisely makes no such claims. Its function is simply to put into common language the history and traditions of Britain, our political institutions and social services, our arts and sciences and industries, even our sports—in short, the British way of life. Nor does it stop there, for the traffic in culture is no one-way affair. Exports lead to imports. If our story is likely to interest the Colonial peoples—and it will, if we tell it rightly, in the right spirit and in the right language—it is no less true that their life-stories will interest us. Thus the Council fulfils the double rôle of interpreting Britain to her Colonies and encouraging the interpretation of her Colonies to Britain.

In carrying out this policy in foreign countries, the focal point is the British Institute staffed by a director, lecturers and teachers under the general guidance of the Council's territorial representative. English is taught. Debates and lectures are arranged, with the backing of a library of British books and periodicals and with exhibitions of British films and books, arts, drama and music.

Sir Angus pays a well-deserved tribute to the memory of the late Lord Lloyd, who as Chairman of the Council and, later, also Secretary of State for the Colonies, would undoubtedly have extended to the Colonial Empire the facilities at first reserved for foreign countries. When a beginning was made, it was intended primarily to counteract Nazi and Fascist propaganda in the Near and Middle East; and British Institutes were founded in Palestine, Cyprus, Aden and Malta. They have done excellent work, and particular mention is made of the splendid part played by the Malta Institute during the war under the gallant leadership of Mr. Wickham, its Director. Later, under the chairmanship of Sir Malcolm Robertson, an Empire Division of the Council was formed of which Sir Angus became the first chief.

If the political advancement of the Colonies, as described in Chapter II in the case of Nigeria, means anything, it means a definitely progressive policy in the political sphere, which calls for a parallel advance in the cultural and spiritual spheres. Indeed, so far as the Colonial Empire is concerned, Sir Angus advocates not so much "British" Institutes—for they are British already—as a Lagos Institute or a Trinidad Institute, each under the control of its own local committee. The object is to ensure that the Institute is not just something imposed from outside, but an organization which belongs to the people themselves. "We want them to feel that it is through them that we seek to spread the light, and it is they who are providing a common ground where men of goodwill of any race or colour can meet, without the restraints of host and guest or of office correctitude, to exchange ideas and discuss mutual problems."

Sir Angus describes the actual fields in which the Council operates in the Colonial Empire—the West Indies and West Africa with extensions to Mauritius and East Africa—or amongst Colonial peoples resident in the United Kingdom, and the activities now at work in execution of Council policy. He refers, as Sir Bernard Bourdillon does, to our Partnership with the peoples of the Dependencies, and concludes that partnership is

not enough. "We want something warmer and more vital, something which will secure closer and more intimate ties than ledgers and legal documents. We want, in fact, human friendship—the friendship which can only be born of mutual understanding and of an intimate insight into each other's way of life."

* * * * *

Complementary, in some respects, to Sir Angus Gillan's paper is that in which Mr. F. H. Andrews (Chapter 5) describes the need for a Centre of Oriental Culture in London—the projection, in other words, of East on West. Mr. Andrews prefaces his paper by referring to the important Committee, sitting under Lord Zetland's chairmanship, which has been giving practical consideration to the whole matter. Mr. Andrews cannot in any way anticipate the recommendations of the Committee; he is expressing in this paper his own personal views based on many years spent in India and Kashmir, backed by half a century in close association with "various aspects of Oriental ethnography as expressed by the arts of the painter, the sculptor, potter, architect and all the smaller domestic crafts."

In spite of the attractions of the romantic and adventurous East, from the days of Alexander the Great, of the Polo family (Marco in particular) and of our own traders, administrators, scholars and even mere globe-trotters, Britain still seems indifferent to the claims of the Eastern peoples, with their great achievements, upon our attention; indifferent also to the extent of our indebtedness to Oriental culture. It is true that during the nineteenth century great and increasing interest had been shown in Oriental ethnography as expressed in architecture, paintings and sculpture, in pottery and other arts and crafts. Several Societies for the study of Oriental languages and culture were founded, from the Asiatic Society of Bengal, in 1783 (which has published a *Journal* since 1832) and the Royal Asiatic Society dating from 1823 to the Royal Society of Arts (India Section, founded in 1869), and the Royal India Society, 1910; and the

movement which started in the later days of the Hon'ble East India Company received an impetus during Lord Curzon's vice-royalty, when the Archæological Survey of India was reconstituted under the brilliant directorship of Sir John Marshall.

In view of these developments, it is the more regrettable, says Mr. Andrews, that exhibits of Oriental culture in Britain are scattered between several London homes and that no single centre has yet been established worthy of the great wealth of Oriental art of which India, Burma and Ceylon, to mention no others, are outstanding exponents within the Empire. In 1833, the East India Company had financed a scheme for the systematic search for coins and their arrangement in the Company's London museum, and this had led to the addition of carvings and to a development of interest in the stupas and sculpture of India. The numerous finds of coins have been studied by numismatists and gradually arranged in chronological order, thereby recovering a great amount of dynastic history; but the many examples of sculpture of which the definite provenance is unrecorded, still remain, for the most part, just disconnected fragments, fascinating in their appeal and offering to the successful investigator ample recompense for their systematic study.

The subsequent history of these collections is tragic. From their home in the Leadenhall Street Museum they were divided, as a temporary measure, between the South Kensington Museum, the British Museum, the Bethnal Green Museum, Kew and the Royal School of Mines. Subsequently there was talk of the breaking up of the South Kensington collection, and Mr. Andrews quotes here the very apposite objections raised by Lord Curzon and by Sir Richard Temple, in 1909, to the proposal, which fortunately did not materialize.

At the turn of the century the quickened interest in Oriental culture, for which so great a debt is due to the enthusiasm of Lord Curzon, resulted in an extension of systematic research by the Archæological Survey of India over an ever-widening field which now includes, not only India and Ceylon, but also Burma,

Chinese Turkestan, Gedrosia and all the territory of the Indus Basin and contiguous lands. The war has brought to this country many thousands of visitors from the East, and has carried eastwards many thousands of British combatants. In the near future, with the rapidity of modern travel, East and West will be drawn still closer to each other. All the more need for an Oriental Centre to be "a rendezvous for both Orientals and Westerners" where friendly intercourse in congenial surroundings would promote mutual knowledge and understanding.

Mr. Andrews then goes on to develop his ideas for the effective organization and location of an Oriental Centre. It should become "an attractive and appropriate focal point for visitors, providing rooms for private consultations, for small committee meetings, and such other facilities as the general idea may suggest. It should be a rendezvous for Orientals and Westerners where friendly intercourse in congenial surroundings would promote knowledge and understanding of each other." The building will not be just an official curiosity shop or departmental store. It must tell a connected story. It should have extensive floor space, uninterrupted by massive piers or cross-walls, and provision should be made for adaptable partitions, capable of being adjusted to meet the needs of each particular display.

Mr. Andrews recommends that the arrangement of the collections should be mainly chronological, so that the exhibits of a single era could conveniently be studied in their relations with each other. Accurate models and plaster casts would help to fill gaps and to present the complete picture. There should be meeting-rooms for private as well as public discussions, library, picture-gallery, cinema, photographic and lantern-slide departments. An exhibition-hall would be necessary, and provision should be made for the preparation and issue of periodicals and brochures.

Mr. Andrews concludes: "I visualize the creation, architecturally, as a dignified group of buildings, perhaps in the form of a quadrangle, with the museum, by its need for great floor

and wall space, as the central component with flanking wings to accommodate the Societies, each to have its own entrance, and, of course, to retain its complete independence of administration and its prestige, and to have the advantages of the use of the museum, lecture halls, theatre and cinema. . . . And so our Oriental Cultural Centre, in its aims and by its architectural importance, should be an impressive symbol and a practical expression of the bonds that unite East and West and a potent agent for strengthening those ties by promoting friendly intercourse and mutual appreciation—a creation in all respects befitting the greatness of the Empire and worthy of the Empire's Capital City."

* * * * *

We have surveyed some of the chief objectives facing the British Commonwealth under a few main heads—Politics, Economics, Science, Exploration and Development, Capital and Labour, Education and Cultural Relations. The survey illustrates the immense diversity of the objects in view and of the peoples united in pursuing them. What is it that holds this vast body together, reconciling world-wide variations of nationality, custom and creed? The Crown? It is generally recognized that the member-States are, in the words of the Balfour Declaration, "united by a common allegiance to the Crown," and this phrase covers, not merely the Dominions, but the whole Commonwealth. But the Crown is thus viewed not as a mere administrative convenience, but rather as embodying certain practical ideas and ideals which all member-States equally share and certain common objectives towards the attainment of which all are prepared to co-operate.

EMPIRE RELATIONS

BY THE RT. HON. THE VISCOUNT BENNETT, P.C., K.C.,

Prime Minister of Canada, 1930-35

AT THE BEGINNING OF THE RECENT WAR, THE BRITISH EMPIRE comprised almost one-quarter of the earth's surface, peopled by practically one-quarter of the world's population, of every race and creed. It is a collection of separate entities, and yet it is a political unit. It is comparable to no other Empire which the world has known, and wholly different from any of the present. It has no written Constitution. It has no central government controlling the whole. Its permanent citizens are British subjects or British protected persons united by common allegiance to the Crown.

Prior to the beginning of the present war, the possessions of the British Empire were classified according to the type of government and the degree of British control, as follows:

(1) The Dominions, which are equal in status with the United Kingdom—

- (a) Unitary Dominions: New Zealand, Irish Free State (Eire), and Newfoundland until 1934.
- (b) Federations: Canada, with the provinces of Ontario, Quebec, Nova Scotia, New Brunswick, Manitoba, British Columbia, Prince Edward Island, Saskatchewan, and Alberta, and the North-West Territories and the Yukon.

The Commonwealth of Australia, with the States of New South Wales, Victoria, Queensland, South Australia, Western Australia and Tasmania, and the Northern Territory and the Australian Capital Territory.

- (c) The Union of South Africa, with the provinces of the Cape of Good Hope, Natal, Transvaal, and the Orange Free State.

Australia controls Papua and Norfolk Island, and the Mandated Territories of New Guinea and Nauru; New Zealand, the Ross Dependency and the Union Islands, and the Mandated Territory of Western Samoa; the Union of South Africa, the Mandated Territory of South-West Africa.

- (2) India, comprising 11 Provinces and nearly 570 States, great and small. The States are governed by hereditary rulers under the suzerainty of the Crown. They have no relations with foreign powers. Their relations with Great Britain are determined by Treaties supplemented by usage and sufferance. Their peoples are not British subjects but British protected persons.

In view of pending negotiations between India and the British Government, further details are omitted.

- (3) All other territories are in some degree subject to the control of the United Kingdom—

- (a) The Isle of Man and the Channel Islands.
- (b) Colonies possessing responsible government: Southern Rhodesia, and, as regards internal affairs, Malta, Ceylon.
- (c) Burma: The executive authority is exercised by the Governor representing His Majesty, assisted by a Council of Ministers who must command the support of a majority of the House of Representatives. The country is under the general control of the Secretary of State for Burma, who is also the Secretary of State for India.

The Shan States, under the executive government of Burma, but not within the jurisdiction of the Burma Legislature, administered by their Chiefs under the supervision of a Commissioner of the Federated Shan States. The three Karenni States that lie to the south of the Southern Shan States are administered by Chiefs under the advice of the Commissioner of the Federated Shan States through an Assistant Political Officer.

- (d) Colonies administered under the control of the Secretary

of State for the Colonies, and Protectorates similarly administered:

- (i) Colonies possessing an elected House of Assembly and a nominated Legislative Council: Bahamas, Barbados, Bermuda.
- (ii) Colonies possessing a partly elected Legislative Council, the constitution of which does not provide for an official majority: British Guiana.
- (iii) Colonies and protectorates possessing a partly elected Legislative Council, the constitution of which provides for an official majority: Fiji, Grenada, St. Lucia, St. Vincent (united as the Windward Islands for administrative purposes), Jamaica, Leeward Islands, Trinidad, Gold Coast, Nigeria (colony and protectorate), Sierra Leone (colony and protectorate), Kenya, Northern Rhodesia, Mauritius, Straits Settlements.

The Legislative Council of Kenya has power to legislate for the Kenya Protectorate.

- (iv) Colonies and protectorates possessing a nominated Legislative Council: British Honduras, Falkland Islands, The Gambia, Nyasaland Protectorate, Uganda Protectorate: Hong Kong, Seychelles: Zanzibar.

In all these councils, save that of British Honduras, the constitution provides for an official majority.

The Legislative Council for Gambia has power to legislate for the Gambia Protectorate.

- (v) Colonies and protectorates without a Legislative Council: British Solomon Islands Protectorate, Gilbert and Ellice Islands Colony: Ashanti, Northern Territories of the Gold Coast, Somaliland: Gibraltar, St. Helena: Cyprus (unsettled).

In all these colonies and protectorates, except Bahamas, Barbados, Bermuda, British Honduras, and the Leeward Islands, the Crown has the power of legislating by Order in Council.

- (e) Mandated Territories: Palestine, Tanganyika Territory, the Cameroons and Togoland under British Mandate, Trans-Jordan.
- (f) Protected States: Federated Malay States (Perak, Selangor, Negri Sembilan, and Pahang); Unfederated Malay States (Johore, Kedah, Perlis, Kelantan and Trengganu), Brunei, North Borneo, Sarawak, Tonga.
- (g) The Aden Protectorate (including Perim and Socotra) was placed, from April 1st, 1937, under the control of the Colonial Office, together with Aden itself, which became a Crown colony from the same date.
- (h) Various small islands are either possessions or protectorates, and have no regular administration: Tristan da Cunha is the most important; a number of islands are leased, such as Amboyna Cay and Sprattley Island in the China Sea, and Malden Island. The Great and Little Basses and Minicoy are islets in the Indian Ocean with lighthouses maintained by the Board of Trade, and there is a similar lighthouse at Sombrero, in the West Indies. The Kuria-Muria Islands off the south-east coast of Arabia were ceded by the Imam of Muskat for the purpose of landing the Red Sea telegraph cable.

In the Western Pacific, Pitcairn Island and a large number of scattered groups and isolated islands, such as Fanning Island and the Friendly Islands, are controlled by the Western Pacific High Commissioner.

- (i) The Sudan, a condominium the administration of which is shared with Egypt, is controlled by the Foreign Office. The New Hebrides, the condominium of which is shared with France, is subject to the control of the Western Pacific High Commissioner.

The mere reading of this list indicates the magnitude and difficulty of the task of maintaining a common policy and amicable relations between the various countries which constitute the British Empire.

In the sixteenth, seventeenth and eighteenth centuries, discovery, cession, occupation and settlement brought about the acquisition of vast territories by European powers, including England. Newly acquired possessions were frequently transferred to great trading companies for development—for instance, in 1670 the Hudson's Bay Company received a grant from Charles II of practically the whole of what is now Western Canada; the East India Company for years was responsible for the government of India. Government in many of the American colonies was conducted in the same manner. The acquisition of these vast territories arose largely out of wars between England and European Powers. From 1652 to 1763 England was almost continuously at war with the French, Dutch and Spanish, singly or collectively, and in the latter part of the eighteenth century with the North American colonies. But it will be found on investigation that a comparatively small part of the British Empire has been secured by force specifically directed to that end. Additions to the Empire have been incidental to the conduct of great wars. When the wars ended and peace treaties were made, not infrequently the inhabitants of the conquered territories preferred to remain under British rule. Indeed, the British Government has oft-times been requested to extend protection over backward peoples with confidence in British rule.

Fear of another war haunted British statesmen at the end of the Napoleonic Wars, and, notwithstanding the experience with the American Colonies, the Treaties of Peace made at the end of those wars involved many cessions of territory to Great Britain. British Colonies, in fact, increased from 26 in 1792 to 43 in 1816. Colonies were then looked upon merely as having strategic value and providing possible opportunities for trade.

The affairs of the colonies were controlled by the King, in Council, and, for a time, the Secretary of State for the Southern Department. From 1768 to 1782 a separate Secretary of State for the American Department existed. It was abolished as a consequence of the success of the American rebellion. The Board of

Trade and Plantations, which was created in the reign of Charles II and abolished in 1675, and re-created in 1695, exercised certain control over colonies and mercantile matters for nearly a century. The Department of State for War and Colonies was created in 1794. In 1854 a separate Secretary of State for War was appointed, and the War Department was no longer associated with the Colonial administration. The direct government of Colonies was effected through a governor or official appointed by and representing the Sovereign. When he left this island he carried with him his appointment and instructions which, of course, varied with the character of the colony concerned. He was entrusted with and exercised great authority. He could establish courts of justice, make provision for the maintenance of law and order, and was, of course, the executive head of the Government as the representative of his Sovereign. He authorized the election of representatives of the people to sit in a Legislature created by his action. Thus, in the American Colonies Legislatures were established from the date of their settlement, and in some instances by charter even before any considerable settlement.

The governor of a new colony usually availed himself of the assistance of the leading men in the colony, and created an executive council consisting of himself and such persons as he alone might choose to assist him. To enact ordinances, he might nominate a legislative council, the members of which were sometimes also members of the Executive Council. Executive and legislative functions of government were thus exercised by the same men not responsible to elected representatives of the people. Even when a Legislature was established it might enact laws, but the Governor could decline to approve of such legislation, or reserve it for consideration by the Home Government in London. As, however, the Legislature controlled the levy of taxes and grants of money and provided the salary of the Governor, differences between the Executive and the Legislature were usually settled by negotiation. The colonists felt that Downing Street dominated their government, and although the

legislatures in the exercise of the powers conferred upon them could, and did, tax the people, nevertheless taxes and legislation were imposed upon the same colonists by the Parliament at Westminster in which they were not represented. However valid legally such action might be, it met, as might have been expected, and as was foreseen by some of the greatest of English statesmen, with the opposition of many of the colonists who carried with them from these islands a love of freedom that was stronger than their allegiance to the Crown, and the same spirit prevailed with their immediate descendants.

Several of those who signed the Declaration of American Independence were members of the Middle Temple, and many who attained high positions in the colonies had received their education in this country, and would probably have shown the great qualities they manifested overseas had they remained in this Kingdom. It was difficult for such men to reconcile themselves to the idea that their residence overseas made them inferior persons, subordinate to the residents of these islands. The American colonists successfully rebelled, and with the recognition by England of their independence there ended what has been referred to as the first British Empire.

The agitation by the remaining British colonists in North America for responsible government—that is, government by an executive responsible to an elected assembly and commanding the confidence of the majority of the elected representatives of the people—became so strong that in what are now the provinces of Ontario and Quebec there was a short-lived armed uprising against the Crown. Separation of the colonies from the Mother Country seemed to many leading statesmen to be inevitable. Colonial representation in the Parliament at Westminster was suggested and discussed as a remedy. Hume actually moved an amendment when the Reform Bill was under consideration, providing that the colonies should have nineteen members in the Imperial Parliament. His proposal was greeted with laughter! Disraeli suggested to his chief that thirty members at St. Stephen's

would be a great help to the party. No action was taken. A solution was found in the investigations and report of one of the really great men of his time—Lord Durham. He was appointed Governor-General of Canada in 1837. He investigated conditions there, and made the report which bears his name, with which all students of constitutional history are familiar. He saw no necessity for changing the principle of government in the colonies, and did not believe that any introduction of a new constitutional theory would “completely remove existing political disorders.” He reported that—

“Every purpose of popular control might be combined with every advantage of vesting the immediate choice of advisers in the Crown were the Colonial Governor to be instructed to secure the co-operation of the Assembly in his policy by entrusting its administration to such men as could command a majority; and if he were given to understand that he need count on no aid from home in any difference with the Assembly that should not directly involve the relations between the Mother Country and the Colony . . . and I admit that the system which I propose would, in fact, place the internal Government of the Colony in the hands of the Colonists themselves; and that we should thus leave to them the execution of the laws of which we have long entrusted the making solely to them. If the Colonists make bad laws and select improper persons to conduct their affairs, they will generally be the only, always the greatest, sufferers; and like people of other countries, they must bear the ills which they bring on themselves until they choose to apply the remedy.”

But Lord Durham was of the opinion that there were certain matters which so concerned the Mother Country that they should be left solely within the legislative jurisdiction of the Imperial Parliament.

“The matters which so concern us are very few. . . . The constitution of the form of Government—the regulation of

foreign relations and of trade with the Mother Country, the other British Colonies and foreign nations—and the disposal of the public lands are the only points on which the Mother Country requires a control.”

The recommendations of the Report were partially adopted by the Government of the day and we may date the general establishment of responsible government throughout the Empire from the Durham Report of 1839. Henceforth it was the sovereign remedy for the solution of Colonial Government problems. The foundation and strength of British influence was in the appointment of the Governor by the British Government and his authority over Colonial policy; his right to reserve Bills enacted by the Colonial legislature for the consideration of the Home Government and the veto power of that Government or its power to disallow acts passed by the Legislature, if, in the opinion of Whitehall, they were inimical to Imperial interests; the unlimited power of the Parliament at Westminster to legislate for the whole of the British Empire; and above all, the power of the Imperial Government to deal with the defence of the far-flung Empire, grant trade preferences and control foreign relations in every aspect.

Both in the interests of the Colonies and the Empire, it became increasingly apparent that, for many different reasons, where feasible, Colonies should be united under one Government with a Constitution agreed upon by the people of the uniting Colonies.

In 1867, the four British Colonies of North America were united under a federal union into a confederation known as the Dominion of Canada. In the next few years the territory between the Great Lakes and the Rocky Mountains and the Island of Prince Edward were added to the new Dominion, which was ultimately extended to the Pacific Ocean. The Preamble to the Imperial Act stated that the Colonies had expressed their desire to be federally united into one Dominion under the Crown of the United Kingdom of Great Britain and Ireland with a Constitution similar in principle to that of the United Kingdom.

The Constitution may be amended by Act of the Imperial Parliament on the request of the Canadian Parliament.

In 1900, the Commonwealth of Australia was created by Imperial Statute. The Constitution was framed in Australia and attached as part of the Statute, it being recited that the people of the Colonies, humbly relying on the blessing of Almighty God, had agreed to unite in one indissoluble federal Commonwealth under the Crown of the United Kingdom of Great Britain and Ireland. The Constitution may be amended by the Australian Parliament and people.

In 1909 a Statute was passed at Westminster creating the Union of South Africa. The Preamble expressed the view that it was desirable for the welfare and future progress of South Africa that the British Colonies should be united under one Government in legislative union on terms and conditions to which the uniting Colonies had agreed by resolutions of their respective legislatures. The Constitution may be amended by the Parliament of South Africa.

The Constitution of the Irish Free State (Eire) was framed in 1922 under circumstances to which reference will hereafter be made.

In 1935, the Government of India Act was passed, providing for the establishment of an All India Federation. The Statute is not yet in force.

For the purposes of government New Zealand was originally included as part of New South Wales. It became a separate Colony in 1841, provision for its government being made by Imperial Order in Council. In 1846 new provisions were made for the Government of the Colony which were later suspended. In 1852 a Constitution was granted by the Imperial Parliament and responsible government established with a central Parliament and six Provincial Councils. In 1876 the Provincial Councils were abolished and a unitary system of government established, which still continues. It was created a Dominion in 1907. The Constitution may be amended by the Imperial Parliament, but, it is

submitted, only at the request and with the consent of the New Zealand Parliament.

Representative government was instituted in Newfoundland in 1832 by Letters Patent, and responsible government by the same method in 1855. It was created a Dominion during the last Great War. Its Constitution was suspended in 1933 because of financial difficulties, but such action was only taken by the Imperial Parliament at the request of and with the consent of the Legislature of that island. It is governed by a Governor and a Commission which took office in February, 1934.

Long prior to the outbreak of the Great War in 1914, it was apparent that some provision should be made for maintaining communication with and harmonious relations between the various Dominions, as well as between them and the Mother Country. In the years preceding the close of the nineteenth century, Imperial Federation engaged the attention of the leading men throughout the Empire. An Imperial Federation League was created, functioned for a time, and then ceased to exist as such, its work being practically carried on by other bodies. Its main purpose, that of making Imperial Federation a subject to engage men's minds, had been achieved. The movement had the support in principle of Lord Rosebery and many leading public men in this kingdom. A well-known Canadian, Sir George Parkin, toured the Empire advocating the establishment of an Empire Federation with the necessary organization and authority to deal with foreign policy and relations, defence and matters of common concern to the whole Empire. Colonel Denison, of Toronto, also took a leading part in supporting the movement.

But the pendulum began to swing the other way. It was suggested that conferences might serve a useful purpose. Accordingly, in 1887, a Colonial Conference was held in London on the occasion of the Golden Jubilee of the great Queen. The celebrations in connection with the Jubilee were attended by the leading personages of all the Colonies, and the opportunity thus presented enabled representatives of all the self-governing Colonies

to meet together and discuss matters of common concern. It was purely consultative.

In 1894 a Conference was called by the Canadian Government which met at Ottawa. Lord Rosebery was then Prime Minister, and his interest in the Empire is indicated by the following paragraph in the Queen's speech proroguing Parliament in August, 1894:

"A Conference was held in Ottawa in the month of June last in which the representatives of the Imperial Government, the Dominion of Canada, the Cape and the Australian Colonies met to consider questions relating to Colonial territories and communications. I have learnt with satisfaction that the proceedings of the Conference were of a character calculated to strengthen the unity of the Colonies concerned, both among themselves and with the Mother Country."

The third Conference was held in 1897 on the occasion of the Diamond Jubilee of Queen Victoria. As was the case ten years before, the Jubilee celebrations afforded an opportunity for the representatives of the self-governing Colonies to meet together and discuss their common problems. The opinion was expressed that periodical conferences between representatives of the self-governing Colonies and the United Kingdom were desirable, and a resolution to that effect was passed.

The Coronation of King Edward VII in 1902 afforded a further opportunity for the holding of a similar conference at which common problems were again discussed. But it was at the next Conference in 1907 that precision was given to the organization of Imperial Conferences as it still remains. The relevant resolution reads as follows:—

"That it will be to the advantage of the Empire if a Conference, to be called the Imperial Conference, is held every four years at which questions of common interest may be discussed and considered as between His Majesty's Government and his Governments of the self-governing Dominions

beyond the seas. The Prime Minister of the United Kingdom will be *ex-officio* President, and the Prime Ministers of the self-governing Dominions *ex-officio* members of the Conference. The Secretary of State for the Colonies will be an *ex-officio* member of the Conference and will take the chair in the absence of the President. He will arrange for such Imperial Conferences after communication with the Prime Ministers of the respective Dominions. Such other Ministers as the respective Governments may appoint will also be members of the Conference, it being understood that, except by special permission of the Conference, each discussion will be conducted by not more than two representatives from each Government, and that each Government will only have one vote. . . . That upon matters of importance requiring consultation between two or more Governments which cannot conveniently be postponed until the next Conference or involving subjects of a minor character or such as call for detailed consideration, subsidiary conferences should be held between representatives of the Governments concerned specially chosen for the purpose."

Subsidiary conferences were, in fact, held. On Copyright in 1910; and Empire Patents in 1922; on Forestry in 1920, 1923, 1928 and 1935; on Mycology in 1924 and 1930; on Entomology in 1920 and 1925; on Customs in 1921, and on Empire Settlement during the same year; on Education and on Agricultural Research in 1927; on Cable and Wireless Communications in 1928; and the British Commonwealth Scientific Conference was held in 1936. Imperial Conferences were held in 1911, 1917, 1918, 1921, 1923, 1926, 1930 and 1937. Concurrently with the Imperial Conference of 1923, an Imperial Economic Conference was held during the same year; and a second Imperial Economic Conference was held at Ottawa in 1932.

Prior to the holding of the 1907 Conference, in 1905, to be exact, Mr. Alfred Lyttleton, the then Colonial Secretary, addressed a despatch to the self-governing Dominions and

Colonies proposing that the Colonial Conference should be transformed into an Imperial Council, Great Britain to be represented by the Colonial Secretary and the other members of the Council to be the Prime Ministers of the Dominions, or representatives appointed for that purpose by their governments. India was to be represented. It was also proposed to establish in London a permanent commission or secretariat of the Imperial Council for the purpose of maintaining continuity between the periodical meetings. The Canadian Government contended that any change in the title or status of the Colonial Conference should originate and emanate from that body itself, but suggested the title "Imperial Conference," which was adopted by the Conference itself in 1907. As for a permanent secretariat, Canada contended that it might conceivably interfere with the working of responsible government. I have always regretted the action of Canada at that time, which has had far-reaching consequences.

Thus, by 1907, conferences had become a fixed method of consultation between the self-governing Colonies and Great Britain and one another. The main weakness was that they met at irregular intervals. Some connecting link was required between one conference and another. Mr. Lyttleton's proposals were to set up machinery which would keep the conference alive as an organization in the intervals between the meetings. In 1911, for the same reason and purpose, Mr. Harcourt, then Secretary of State for the Colonies, submitted to the Imperial Conference of that year a proposal for the appointment of a standing committee of the conference. His proposal was opposed by practically all the Dominions and abandoned. At the same Conference Sir Joseph Ward, of New Zealand, proposed and strongly urged the establishment of an Imperial Council of State composed of representatives from the United Kingdom and the Dominions, but the Conference was not impressed with his view, and it did not command support.

A very important resolution was adopted at the Conference or

Colonies proposing that the Colonial Conference should be transformed into an Imperial Council, Great Britain to be represented by the Colonial Secretary and the other members of the Council to be the Prime Ministers of the Dominions, or representatives appointed for that purpose by their governments. India was to be represented. It was also proposed to establish in London a permanent commission or secretariat of the Imperial Council for the purpose of maintaining continuity between the periodical meetings. The Canadian Government contended that any change in the title or status of the Colonial Conference should originate and emanate from that body itself, but suggested the title "Imperial Conference," which was adopted by the Conference itself in 1907. As for a permanent secretariat, Canada contended that it might conceivably interfere with the working of responsible government. I have always regretted the action of Canada at that time, which has had far-reaching consequences.

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1911, on the motion of Sir Wilfred Laurier, Prime Minister of Canada. The resolution reads as follows:—

“That His Majesty should be approached with a view to the appointment of a Royal Commission representing the United Kingdom, Canada, Australia, New Zealand, South Africa and Newfoundland with a view of investigating and reporting upon the natural resources of each part of the Empire represented at this Conference, the development attained and attainable, and the facilities for production, manufacture, and distribution, the trade of each part with the others and with the outside world, the food and raw material requirements of each and the sources thereof available. To what extent, if any, the trade between each of the different parts has been affected by existing legislation in each either beneficially or otherwise and by what methods, consistent with the existing fiscal policy of each part, the trade of each part with the others may be improved and extended.”

In 1912 a Commission was, in fact, appointed, known as the Royal Commission on Natural Resources, Trade, and Legislation of certain portions of His Majesty's Possessions, under the Chairmanship of Sir Howard Vincent, afterwards Lord d'Abernon. Evidence was taken throughout the Empire in 1912, 1913, 1914, 1916 and 1917; 162 meetings were held and 851 witnesses examined. The Commission reported on February 21st, 1917. One of the most important recommendations was that an Imperial Development Board, consisting of 12 members should be created, seven from the United Kingdom, India, the Crown Colonies and Protectorates, and one each from Canada, Australia, New Zealand, South Africa and Newfoundland. It was to be advisory to Imperial Conferences and a connecting link between the meetings of such Conferences. In their report, the Commission, realizing the failure of past efforts to maintain continuity between Imperial Conferences, used these words:—

“It may be urged that Mr. Lyttleton's proposal in 1905 for the creation of an Imperial Commission and again those put

forward by Mr. Harcourt at the Imperial Conference of 1911 for the appointment of a Standing Committee of the Conferences met with considerable opposition and were abandoned. Will not then the present proposals meet with similar objections and a similar fate? To this we reply that in 1905 and even in 1911 the urgency of promoting Imperial development on scientific lines was but dimly realized, if realized at all. Since the Imperial Conference of 1911 the whole conception of inter-Imperial relations has altered, and the need for co-operation between the Governments in such matters as the development of their resources and the best distribution of their population has been brought into the strongest relief."

Twenty-five years later a similar observation might be made, for no effective action has yet been taken.

The Great War of 1914-1918 profoundly influenced the attitude of the Dominions and India regarding their constitutional position. When the day of trial came the response of the Dominions and India vindicated the principle that they had consistently upheld. Even the late Lord Bryce did not believe that the Dominions and Colonies would support this kingdom in a great war. But by 1917 the Dominions and Colonies had voluntarily enlisted, trained and sent overseas upwards of a million men to serve in the naval, military and air forces of the Empire. In fact, over two millions of men were enlisted in the cause of Britain whose normal home was not in these Islands. Thousands of their citizens had laid down their lives for the common cause. The Dominions were supplying tremendous quantities of munitions and mortgaging their future by greatly increasing their national debts. Their Prime Ministers had taken part in directing the course of the war, and when, in 1917, the British War Cabinet met with representatives of the overseas Dominions as an Imperial War Cabinet or Conference, they pressed their claim to equality of status with this kingdom. The Australian Prime Minister was unable to attend, and General

Smuts represented General Botha, Prime Minister of South Africa. The subject was regarded as being so important and intricate as to warrant the holding of a special Imperial Conference to be summoned as soon as possible after cessation of hostilities—in reality an Empire Constitutional Convention. The resolution reads:—

“The Imperial War Conference are of opinion that the readjustment of the constitutional relations of the component parts of the Empire is too important and intricate a subject to be dealt with during the war, and that it should form the subject of a special Imperial Conference to be summoned as soon as possible after the cessation of hostilities.

“They deem it their duty, however, to place on record their view that any such readjustment, while thoroughly preserving all existing powers of self-government and complete control of domestic affairs, should be based upon a full recognition of the Dominions as autonomous nations of an Imperial Commonwealth, and of India as an important portion of the same, and should recognize the right of the Dominions and India to an adequate voice in foreign policy and in foreign relations, and should provide effective arrangements for continuous consultation in all important matters of common Imperial concern and for such necessary concerted action, founded on consultation, as the several Governments may determine.”

The signing of the Armistice in 1918 necessitated the negotiating of Peace Treaties with the Central Powers. When the peace delegates met, the Dominions pressed their claim for representation separate from that of the United Kingdom. This was opposed by foreign powers, but, in the end, the claim of the Dominions was allowed and all the Treaties were signed by the Prime Ministers or representatives of each Dominion and India, except Newfoundland. They also succeeded in their claim to recognition as members of the League of Nations. Equality of status had been secured so that in 1921 the Imperial War Con-

ference concluded that developments subsequent to 1917 had made their new status an accomplished fact and rendered a constitutional Conference unnecessary. The relevant Resolution reads as follows:—

“(a) Continuous consultation, to which the Prime Ministers attach no less importance than the Imperial War Conference of 1917, can only be secured by a substantial improvement in the communications between the component parts of the Empire. Having regard to the constitutional developments since 1917, no advantage is to be gained by holding a Constitutional Conference.

“(b) The Prime Ministers of the United Kingdom and the Dominions and the Representatives of India should aim at meeting annually, or at such longer intervals as may prove feasible.

“(c) The existing practice of direct communication between the Prime Ministers of the United Kingdom and the Dominions, as well as the right of the latter to nominate Cabinet Ministers to represent them in consultation with the Prime Minister of the United Kingdom are maintained.”

It is important to recall that as early as 1921 Mr. Lloyd George, the then Prime Minister of the United Kingdom, stated that the British Dominions had then been accepted fully into the comity of nations by the whole world. They were, he said, signatories to the Treaty of Versailles and of the other treaties of peace. They were members of the Assembly of the League of Nations. They had achieved full national status and stood beside the United Kingdom as equal partners in the dignities and in the responsibilities of the British Commonwealth. Lord Milner said:—

“The only possibility of a continuance of the British Empire is on a basis of absolute out-and-out partnership between the United Kingdom and the Dominions. I say that without any kind of reservation whatsoever. It is very easy to say that; but undoubtedly the working out of it in practice without bringing about the severance of relations between us and

the Dominions will be one of the most complicated tasks which statesmanship has ever had to face. I am not afraid of it, and yet I have to admit that the difficulties are such that our best efforts may end in failure. I hope not. At any rate, there is no other way out."

But the new position of equality of status lacked definite and precise statement in appropriate terms by an Imperial Conference. Accordingly, when the Conference met in 1926, a committee, presided over by the late Lord Balfour, considered the whole question and reported that the position and mutual relations of the Mother Country and the Dominions might be readily defined:—

"They are autonomous communities within the British Empire, equal in status, in no way subordinate one to another in any aspect of their domestic or external affairs, though united by a common allegiance to the Crown and freely associated as members of the British Commonwealth of Nations."

This declaration, it will be observed, follows in principle the resolution of the Imperial War Conference of 1917, and states the position as indicated by the British Prime Minister in 1921.

At the meeting of the Imperial Conference in 1930 a draft Bill was prepared which, in 1931, was enacted by the Imperial Parliament as the Statute of Westminster, 1931. The vital sections of the Statute do not apply to Australia and New Zealand until they have taken appropriate legislative action for their adoption. The Statute no longer applies to Newfoundland. The important preamble reads as follows:—

"Whereas the delegates of His Majesty's Governments in the United Kingdom, the Dominion of Canada, the Commonwealth of Australia, the Dominion of New Zealand, the Union of South Africa, the Irish Free State and Newfoundland, at Imperial Conferences holden at Westminster in the years of Our Lord nineteen hundred and twenty-six and nineteen hundred and thirty, did concur in

making the declarations and resolutions set forth in the report of the said Conferences:

"And whereas it is meet and proper to set out by way of preamble to this Act that, inasmuch as the Crown is the symbol of the free association of the members of the British Commonwealth of Nations and as they are united by a common allegiance to the Crown, it would be in accord with the established constitutional position of all the members of the Commonwealth in relation to one another that any alteration in the law touching the Succession to the Throne or the Royal Style and Titles shall hereafter require the assent as well of the Parliaments of all the Dominions as of the Parliament of the United Kingdom:

"And whereas it is in accord with the established constitutional position that no law hereafter made by the Parliament of the United Kingdom shall extend to any of the said Dominions as part of the Law of that Dominion otherwise than at the request and with the consent of that Dominion:

"And whereas it is necessary for the ratifying, confirming, and establishing of certain of the said declarations and resolutions of the said Conferences that a law be made and enacted in due form by authority of the Parliament of the United Kingdom:

"And whereas the Dominion of Canada, the Commonwealth of Australia, the Dominion of New Zealand, the Union of South Africa, the Irish Free State and Newfoundland have severally requested and consented to the submission of a measure to the Parliament of the United Kingdom for making such provision with regard to the matters aforesaid as is hereafter in this Act contained."

It will be noted that the second paragraph of the Preamble declared that *In Free Association* the Dominions are *United by a common Allegiance to the Crown as Members of the British Commonwealth of Nations*.

While it was agreed that the Dominions must have an adequate

voice and influence in the direction of the Empire's foreign policy and relations the problem as to how "continuous consultation" is to be maintained is still unsettled. In my opinion a constitutional conference should have been held before proceeding with the enactment of the Statute of Westminster. To make declarations and suggestions through advisory resolutions without working out the methods by which effect may be given to such resolutions is not conducive to unity and harmony of relations. The right to share in determining foreign policies and relations is an extremely serious responsibility. Admittedly, the Dominions now enjoy that right. Yet no method has been evolved to provide for continuous consultation between Imperial Conferences. A report in the daily Press indicates that local opposition to the war policies of the Governments of Canada, Australia, South Africa and even New Zealand has been manifest. It is my conviction that such difficulties have arisen from failure to provide adequately for continuous consultation between the various units of the Empire on foreign policy and relations.

The late Lord Tweedsmuir, when Governor-General of Canada, in a speech at Montreal in October, 1937, celebrating the tenth anniversary of the foundation of the Canadian Institute of International Affairs, said that a Canadian's first loyalty was not to the British Commonwealth of Nations, but to Canada, and to Canada's King, and those who denied this were doing a great disservice to the Commonwealth. The Nations of the Empire must think out their own special problems. Every nation must have a foreign policy in the sense that it must consider its position *vis-à-vis* the world at large. I wholly disagree with that view. Of course, the Governor-General is the representative of the Sovereign and no longer an official of the Government of the United Kingdom, and speaks officially only on the advice of his Ministers. So cautious a statesman as Sir Robert Borden, in a public lecture in 1921, went so far as to say:—

"The constitutional resolution of 1917 laid down certain principles which may reasonably be regarded as essential to

the future unity of the Empire. If the self-governing Dominions may not have *adequate* voice and influence in the direction of the Empire's foreign policy, it is not improbable that some of them will eventually have distinctive foreign policies of their own; and that may mean separation. But the resolution of 1917 will be barren of further results unless a way is found to work out its principles in practice. It can hardly be claimed that any development since 1917 has accomplished this. In the Foreign Office men of the highest distinction and ability have found their careers; from that Office have gone forth Ambassadors and Ministers to posts of great responsibility; it has behind it the splendid traditions of many centuries during which there was no overseas nation to claim unaccustomed rights. . . . But the spirit of to-day, while not unconscious of the profound difficulties to which the earnest words of Lord Milner call our attention, will realize that the resolution of 1917 was based upon vital considerations which cannot lightly be disregarded. While it is true that the Dominions were represented at Paris, that they took their place at the Peace Conference, and that they became signatories of the Peace Treaty, I have yet to learn that since the conclusion of peace their right to 'an adequate voice in foreign policy and in foreign relations' has been recognized in any effective or practical way. This result does not seem to justify complacency or inaction. It is perfectly competent for the nations of the British Commonwealth to declare their constitutional relations, and to have them accepted by foreign powers. Until this is done there will be not only difficulty and uncertainty, but danger of reaction. Even within the Empire those relations are imperfectly realized, and abroad their implications are misunderstood, if not resented. Having regard to the resolution of 1917, and to the status gained by the Dominions in the war, it is essential that this condition should not continue."

I am afraid that the condition to which he referred has continued, to some extent at least, even until this day.

The equal participation of the Dominions in foreign policy was, of course, a profound change. It was only in 1911 that Mr. Asquith, then Prime Minister, said:—

“ . . . in respect of such grave matters as the conduct of foreign policy, the conclusion of treaties, the declaration of war and indeed all relations with foreign powers, the authority of the Imperial Government could not be shared and must be exercised by that Government subject only to its responsibility to the Imperial Parliament.”

Yet, twenty years later, the Imperial Parliament passed the Statute of Westminster and all the questions referred to by Mr. Asquith have become matters of common concern to the whole Empire in which common action is essential.

Imperial Conferences have, from time to time, since the members attained equality of status, taken appropriate action to express such equality. The executive head of all their Governments is the King, represented in the Dominions by a Governor-General; as he is no longer an official of the British Government his appointment is made by the King himself on the advice of the Prime Minister of the Dominion concerned. They have dealt with the important question of the negotiation, signature, and ratification of Treaties. They approved machinery with which to deal with Treaties in 1923, modified in the light of experience at the Conference of 1926, and in 1930 it was agreed that—

“Any of His Majesty’s Governments conducting treaty negotiations of any kind with foreign countries should inform the other Governments of His Majesty in case they should be interested and give them the opportunity of expressing their views if they think their interests may be affected.”

It was further agreed that any of His Majesty’s Governments, on receiving such information, should, if they desired to express any views, do so with reasonable promptitude, and that none of His Majesty’s Governments would take any steps which might

involve the other Governments of His Majesty in any active obligation without their definite assent. In the absence of comment, the negotiating Government is entitled to assume that no objection will be raised to the proposed Treaty. On the question of signature, if the Treaty is negotiated by a single Government and concerns it only, it is signed by a plenipotentiary to whom full powers have been granted by the King. Special arrangements are made for signature when the Treaty is of a more complicated nature.

Ratification is the act of the Crown on the advice of responsible Ministers, and it was agreed that, if no comment or objection is made by the other parts of the Empire to the negotiation of a Treaty by any one of them, such acquiescence would be deemed to pledge the Governments of those parts to concur in the ratification in due course. A general form of treaty has been agreed upon. The exercise of the treaty-making powers suggests the appointment of Ministers to represent the Dominions in foreign countries. Accordingly Canada, Australia, New Zealand, South Africa and the Irish Free State have each appointed Ministers accredited to foreign States. Great Britain has made available to the Dominions (if required) her diplomatic and consular services. High Commissioners represent Great Britain in the Dominions. The Dominions are represented in London by High Commissioners who discharge such duties as may be assigned to them by their respective Governments. High Commissioners are also maintained by Dominions with one another.

Imperial Conferences since 1907 have dealt with almost every conceivable subject: Empire Naturalization; Nationality; Merchant Shipping; Imperial Court of Appeal; Steamship and Mail Services; Communications; Commercial Intelligence; Patents; Copyright; Defence, Sea, Land and Air; Disarmament; Commercial, Diplomatic and Consular Services; Marketing; Development of Empire Resources; Reciprocal Enforcement of Judgments; Workmen's Compensation; Imperial Economic Committee; Income Tax; Death Duties; Research; Timber Resources

of the Empire; Wool Production; Roads; Statistics; Uniformity of Customs and Other Forms; and methods of improving consultation between the Governments of the Empire. In fact, with all such matters as arise in the conduct of Government and which affect or concern more than one nation of the Commonwealth and are regarded as being of sufficient importance to engage the consideration of an Imperial Conference. The value of these conferences is apparent to all. They afford an opportunity for representatives of all the nations of the Commonwealth to meet one another and personally discuss Empire problems in the light of their experience and special knowledge of their own communities. But they have not agreed upon any adequate method for providing continuous consultation on matters of common concern.

It will be noted that the Irish Free State was one of the countries that requested and consented to the Statute of Westminster. For obvious reasons I do not propose to discuss the effect of subsequent legislation in Ireland and Great Britain on Empire relations. I shall merely give in chronological order the record of events as affecting such relations.

On December 6th, 1921, an Agreement was entered into between British and Irish delegates regarding the situation in Southern Ireland. The 1st, 2nd, 3rd, 4th and 7th Articles of the Agreement read as follows:—

“1. Ireland shall have the same constitutional status in the Community of Nations known as the British Empire as the Dominion of Canada, the Commonwealth of Australia, the Dominion of New Zealand, and the Union of South Africa with a Parliament having powers to make laws for the peace, order, and good government of Ireland, and an Executive responsible to that Parliament, and shall be styled and known as the Irish Free State.

“2. Subject to the provisions hereinafter set out the position of the Irish Free State in relation to the Imperial Parliament and Government and otherwise shall be that of the Dominion of Canada, and the law, practice, and constitutional

usage governing the relationship of the Crown or the representative of the Crown and of the Imperial Parliament to the Dominion of Canada shall govern their relationship to the Irish Free State.

"3. The representative of the Crown in Ireland shall be appointed in like manner as the Governor-General of Canada and in accordance with the practice observed in the making of such appointments.

"4. The oath to be taken by Members of the Parliament of the Irish Free State shall be in the following form:—

"I . . . do solemnly swear true faith and allegiance to the Constitution of the Irish Free State as by law established and that I will be faithful to H.M. King George V his heirs and successors by law, in virtue of the common citizenship of Ireland with Great Britain and her adherence to and membership of the group of nations forming the British Commonwealth of Nations."

"7. The Government of the Irish Free State shall afford to His Majesty's Imperial Forces:—

"(a) In time of peace such harbour and other facilities as are indicated in the Annex hereto, or such other facilities as may from time to time be agreed between the British Government and the Government of the Irish Free State; and

"(b) In time of war or of strained relations with a Foreign Power such harbour and other facilities as the British Government may require for the purposes of such defence as aforesaid."

The Agreement further provides for the establishment of a provisional government until a Constitution had been agreed upon and a permanent government established, and that the Agreement should be submitted to the British Parliament and to the Irish Assembly for ratification. On March 31st, 1922, the Parliament at Westminster passed an Act giving the force of law thereafter to the several articles of the Agreement.

The Southern Irish Parliament was convened by the then President, Mr. Arthur Griffith, who had been elected President on January 10th, 1922. The Annual Register for 1922 records that in less than an hour the Treaty was unanimously approved by the members present. A provisional government was appointed, and it was agreed that the Irish Free State should officially come into being on January 15th, 1922. That was the last meeting of the members of the Southern Parliament. On January 16th, 1922, the members of the provisional government went to Dublin Castle, where they were received by Lord Fitzalan, the Lord Lieutenant, and their official existence acknowledged. The Irish Parliament, sitting as a constituent assembly, framed the Constitution for what was then designated The Irish Free State, and on December 5th, 1922, the Parliament at Westminster, by Statute, declared such Constitution to be the Constitution of the Irish Free State which came into force on December 6th, 1922.

Article 2 of the Constituent Act provides that "the Constitution" shall be construed with reference to the Articles of Agreement for a Treaty made between Great Britain and Ireland," which, with the Constitution, were set forth as part of the Statute, and the whole given the force and effect of law. The Constituent Act further provides that—

"... if any provision of the Constitution or of any amendment thereof or of any law made thereunder is in any respect repugnant to any of the provisions of the Treaty it shall, to the extent only of such repugnance, be absolutely void and inoperative, and the Parliament and the executive Council of the Irish Free State shall respectively pass such further legislation and do all such other things as may be necessary to implement the scheduled Treaty."

The Constitution declared that the executive authority of the Irish Free State was vested in the King and was to be exercisable in accordance with the law, practice and constitutional usage governing the exercise of the executive authority in the case of the Dominion of Canada by the representative of the Crown;

and further that the representative of the Crown, who was to be styled the Governor-General of the Irish Free State, was to be appointed in like manner as the Governor-General of Canada in accordance with the practice followed in the making of such appointments. Accordingly a Governor-General was appointed. It was also provided that amendments might be made to the Constitution "within the terms of the Treaty" by the Parliament of the Free State, but if not made within eight years from the date of the coming into operation of the Constitution, only when passed by both Houses of the Irish Parliament and approved by a Referendum.

On December 12th, 1936, the Parliament of the Irish Free State passed an Act to make provision in accordance with the Constitution for the exercise of the executive authority of the Parliament of Saorstát Éireann in relation to certain matters in the dominion of external relations and for other matters connected with the matters aforesaid. It provides that diplomatic and consular representatives in other countries "shall be appointed on the authority of the Executive Council," and that every international agreement concluded on behalf of Saorstát Éireann "shall be concluded by or on the authority of the Executive Council." Then follow Sections 3 and 4:—

"3. (i) It is hereby declared and enacted that as long as Saorstát Éireann is associated with the following nations, that is to say, Australia, Canada, Great Britain, New Zealand and South Africa, and so long as the King, recognized by those nations as the symbol of their co-operation continues to act on behalf of each of those nations (on the advice of the several Governments thereof) for the purpose of the appointment of diplomatic and consular representatives and the conclusion of international agreements, the King so recognized may and is hereby authorized to act on behalf of Saorstát Éireann for the like purpose as and when advised by the Executive Council so to do.

"(ii) Immediately upon the passing of this Act the instru-

ment of abdication executed by His Majesty King Edward VIII on the 10th day of December 1936 (a copy whereof is set out in the Schedule to this Act) shall have effect in accordance with the tenor thereof and His said Majesty shall for the purpose of the foregoing subsection of this Section and all other (if any) purposes cease to be King and the King for these purposes shall henceforth be the person who, if His said Majesty had died on the 10th day of December 1936 unmarried, would for the time being be his successor under the law of Saorstát Éireann."

The Irish Free State continued to be governed under the Constitution of 1922 until 1937, when a draft new Constitution was approved by the Parliament of the Irish Free State in June by 62 to 48 votes, and thereafter on July 1st, 1937, the electors on referendum accepted such Constitution. The voting was 685,105 for acceptance and 526,915 for rejection. The new Constitution came into force on December 29th, 1937, and abolishes the office of Governor-General; makes no mention of the King's name or of the Crown; and establishes what is described as the "Sovereign independent democratic State of Ireland," consisting of "the whole of Ireland, its islands and territorial seas under the name of Éire or in the English language, Ireland." It provides for a national flag, for the appointment of a President to exercise the powers conferred upon him by the Constitution and elected by direct vote of the people, holding office for seven years. The oaths of allegiance of members of the Parliament and of the President leave out all mention of the Crown or King.

On December 29th, 1937, it was officially announced that the Governments of the United Kingdom, Canada, Australia, New Zealand and South Africa were prepared to treat the new Constitution as not effecting a fundamental alteration in the position of the Irish Free State as a member of the British Commonwealth of Nations, and added that the Government of the United Kingdom, in taking note of Articles 2, 3 and 4 of the new Constitution, could not recognize that the adoption of the name of Éire or

Ireland or any other provisions of those Articles involved any right to territory or jurisdiction over territory forming part of the Kingdom of Great Britain and Northern Ireland or affecting in any way the position of Northern Ireland as an integral part of the United Kingdom of Great Britain and Northern Ireland. They therefore regard the use of the name of Eire or Ireland as relating only to that area which had hitherto been known as the Irish Free State.

In May, 1938, a Statute of the Imperial Parliament was passed which provides that the territory known as the Irish Free State was to be thereafter known as Eire, and in December of the same year an Act of the Parliament at Westminster confirmed the transfer to Eire of Queenstown and other Irish port facilities, together with certain munitions and supplies therein which had been reserved to Great Britain under the Treaty and Constitution, and Articles 6 and 7 of the Treaty and Constitution making such reservations were declared to cease to have effect.

Eire declared its neutrality in the war just concluded, and German and Italian legations were maintained at Dublin. Is the presence of representatives of enemy States within the territory of a Dominion consistent with the provisions of the Statute of Westminster? Can the Legations of warring enemies of the British Commonwealth of Nations be legally or honourably maintained within the territory of a member of that Commonwealth? Dominions may make separate declarations of war, as, in fact, they have, for such declaration is but the recognition of a condition arising out of "free association" and "common allegiance." It is, of course, understandable that any member nation of the Commonwealth may decline to participate in a war although at war with an enemy, as Parliament may refuse to provide the money with which to carry on a war. But that would not be neutrality. In constitutional practice financial requirements necessitate the consent of Parliament being given in every case where a Dominion actually participates in a war. If a member of the Commonwealth can declare its neutrality, logically it might,

if engaged in a war, make a separate treaty of peace with the enemy which would involve the Crown in maintaining war against an enemy with which the Crown was negotiating a treaty of peace—an obviously impossible and ridiculous situation. The enemy does not divide the British Commonwealth for the purposes of war, but is engaged in hostilities against the Commonwealth as a whole.

It has been suggested that the King is King of each of the Dominions separately. But if so, then as King of one Dominion he may be advised by his Ministers to take action at variance with action taken on the advice of his Ministers in another Dominion. That would hardly be consistent with "free association" based on "common allegiance to the Crown."

The case of *William v. Howarth* reported, in 1905 Appeal Cases, has a bearing on the matter. An action was brought by Howarth, who was a member of the Second New South Wales contingent sent to South Africa in the Boer War, to recover the alleged balance of his soldier's pay. The Government of New South Wales agreed, in consideration of his proceeding to South Africa, to pay him ten shillings per day. Howarth had, however, received pay from the Imperial Government at the rate of four shillings per day, and the New South Wales Government proposed to pay his claim less the amount that he had been paid by the Imperial Government. At the trial the Judge decided in his favour, and the South Wales Court of Appeal confirmed the judgment, which was, however, reversed by the Judicial Committee. Lord Chancellor Halsbury, delivering the judgment of the Committee, consisting of himself and Lords Macnaghten, Davey, Robertson, Lindley and Sir Arthur Wilson, said:—

"The Plaintiff was in the service of the Crown and his payment was to be made by the Crown. Whether the money by which he was paid was to be found by the Colony or the Mother Country was not a matter which could in any way affect his relation to his employer, the Crown. The learned acting Chief Justice, in giving his judgment in this

case, said, 'The King has no concern with payments for services rendered in this colony. The obligation is with the Government of New South Wales.' And so far as their Lordships can understand this is the ground upon which the judgment rests. But with great respect to the learned Judge this is entirely erroneous. The Government with relation to this contract is the King himself. The soldier is his soldier and the supplies granted to His Majesty for the purpose of paying his soldiers, whether they be granted by the Imperial or the Colonial Legislature, are money granted to the King. And the Appropriation Act, whenever an appropriation act is passed, simply operates to prevent its being applied to any other purpose. Under these circumstances money paid was money paid for the services rendered to the King, and no other payment could possibly be due upon the contract declared on."

It is submitted that the Statute of Westminster has not affected the principle upon which that decision rests. From the standpoint of Imperial solidarity and the necessity for a single Empire foreign policy, the words of the late Lord Grey, when Foreign Secretary, are most apposite. He was dealing specifically with the creation of a navy by the overseas Dominions. He said:—

"It is possible to have separate fleets in a united Empire, but it is not possible to have separate fleets in a united Empire without having a common foreign policy which shall determine the action of the different forces maintained in different parts of the Empire. If the action of the forces in different parts of the Empire is determined by divergent views on foreign policy it is obvious that there cannot be union and that the Empire would not consent to share an unlimited liability the risks of which it could not gauge, because this liability would be imposed upon it by different parts of the Empire having different policies. Therefore, the first point I want to make is this: that the creation of separate fleets has made it essential that the foreign policy of the

Empire should be a common policy; if it is to be a common policy it is obviously one in which the Dominions must be taken into consultation, which they must know, which they must understand, and which they must approve, and it is in the hope and belief that the foreign policy of this country, that is Great Britain, does command the assent and approval, and is so reasonable that it must command the assent and approval, of the Dominions that we wish to have a consultation and I wish to explain as fully as I can the present position of foreign affairs and what our views and prospects are."

You will note from the statement that Lord Grey assumed that the foreign policy of the Empire was made by the United Kingdom, as, in fact, it then was, but he hoped it met with the approval of the Dominions.

While equality of status between the Dominions and Great Britain involves the right of all to participate in the framing of the foreign policy of the Empire, I am afraid that to some extent the practice of the days of Lord Grey has prevailed at times during the past ten years. True, there have been consultations and discussions on foreign policy, but such policy has been the policy of the United Kingdom, and while, generally speaking, the Dominions have been advised and consulted, circumstances made it almost impossible for them to do other than agree, as they were not afforded sufficient opportunity to enable them to formulate adequately their views with respect to such policy or discuss its implications before it was made effective.

You will perhaps recall that I pointed out that Lord Durham, in his Report, indicated that there were four matters which he thought must fall within the control of the Mother Country. Two of them I have dealt with. The third and fourth referred to trade and commerce and the disposal of the public lands of the Colonies held by the Crown as Trustees.

A brief reference must be made to trade and commercial relations. So far as external trade is concerned, it was not without

vigorous opposition that the Overseas Dominions succeeded in maintaining their right to legislate freely on commercial matters. British manufacturers long contended that the rôle of the Colonies in British economic life should be to provide raw materials and markets for English goods, and that, if necessary, that position should be maintained by legislation. On three occasions various Colonies established tariffs which, in fact, gave preference to Colonial industries. English manufacturers secured the passing of legislation by the Imperial Parliament that prohibited Colonial Legislatures from enacting tariffs with differential Customs duties which actually delayed the establishment of tariff reciprocity between the Australian Colonies.

The question, however, was finally settled in 1859, when Canada enacted a Tariff Law which was objected to by the Colonial Secretary of that day. Sir Alexander Galt, a Canadian Cabinet Minister, sent a despatch to Downing Street which was conclusive and accepted by the British Government as such. He wrote:—

“Respect to the Imperial Government must always dictate the desire to satisfy them that the policy of this country is neither hastily nor unwisely formed; and that due regard is had to the interests of the Mother Country as well as of the province. But the Government of Canada, acting for its Legislature and people, cannot, through those feelings of deference which they owe to the Imperial authorities, in any way waive or diminish the right of the people of Canada to decide for themselves both as to the mode and extent to which taxation shall be imposed . . . and in the imposition of taxation, it is so plainly necessary that the administration and the people should be in accord, that the former cannot admit responsibility or require approval beyond that of the local Legislature. Self-government would be utterly annihilated if the views of the Imperial Government were to be preferred to those of the people of Canada. It is, therefore, the duty of the present Government distinctly to

affirm the right of the Canadian Legislature to adjust the taxation of the people in the way they deem best, even if it should unfortunately happen to meet the disapproval of the Imperial Ministry. Her Majesty cannot be advised to disallow such acts, unless her advisers are prepared to assume the administration of the affairs of the Colony irrespective of the views of its inhabitants."

In early Colonial history the Navigation Laws played an important part in the economic life of the Colonies. These Navigation Laws regulated the privileges of British ships and the conditions under which foreign ships were admitted to the trade of this country. As long ago as 1651 and 1660 Statutes were passed prohibiting the importation of goods into England except in English ships or ships of the nation which produced the imported goods. They also required that all Colonial produce should be exported in English vessels. In 1663 it was provided by Statute that the Colonies should receive no goods whatsoever in foreign vessels. After the independence of the United States was recognized the effect of these Navigation Laws operated to give Canadians an advantage in the English market. But ship-owners were alleged to have increased freight rates excessively, thereby destroying that advantage. In 1849 all Navigation Acts were repealed. In the last century Colonial Preference was an established policy, but was abandoned by 1860. In 1897 Canada granted a preference to goods imported from Great Britain. Existing Treaties necessitated the preference being extended to Germany and Belgium under the most-favoured-nation clause in those Treaties. Sir Wilfred Laurier requested the British Government to denounce both Treaties so that the preference might be confined to Great Britain. Lord Salisbury complied with the request, and thus a clear distinction was made between international trade in general and inter-Imperial trade in particular. The members of the family could and did prefer one another to the stranger. In 1932, at Ottawa, preferences were established on a larger scale between all the members of the

family, so that Empire trade relations may be said to be based on family preferences, while foreign trade relations are settled by trade treaties negotiated between members of the Commonwealth and foreign States on the principles to which I have already referred.

After much discussion the governments of the Colonies were finally entrusted with full authority to alienate, as to them seemed best, the areas of Crown lands within their territorial boundaries, including not only lands but minerals, precious metals, forests, water powers, lakes, rivers and fisheries. For this great concession the Imperial Government received no money return of any kind. Disraeli pointed out that the question of settlement and disposal of Crown lands should have been the subject-matter of a great Imperial Policy of Settlement and Development, but no such policy was ever formulated. There is, perhaps, little appreciation of the magnitude of the gift thus bestowed by Britain on the peoples overseas, which enabled them to set up housekeeping richly endowed.

Recent discussions in the House of Lords indicate how lacking are the people of this Island in knowledge of the Empire. They take it for granted. Now that its very existence is challenged interest has been stimulated, but I do suggest that an earnest effort should be made to have the story of the Empire better known by the youth of this country. It is an inspiring tale, one of which every British citizen should be proud, and no part of that story better illustrates the genius of the British people for government than the record of the development of the relations between the great self-governing Dominions, including in that term the United Kingdom, and the creation of the British Commonwealth of Nations. But better means must be found to secure adequate and continuous consultation on matters of common concern. As already indicated, we now maintain communications by Imperial conferences, despatches, cables, wireless and telephone messages, and discussions between representatives of the Commonwealth Governments as opportunity offers.

Since the recent war began it has been clearly apparent that personal contacts and discussions between the responsible heads of Governments are absolutely essential to complete understanding and common action. The duty of providing the means for adequate and continuous consultation on matters of common concern between the members of our British Commonwealth does not rest upon one but on each and all its members. I cannot but think that we have learned in the last few years the value of and the necessity for common action by the Governments of the Empire to attain a common end.

I know the matter is engaging the attention of the Governments of the Commonwealth, but perhaps it would not be presumptuous for me to indicate that possibly, if a member of the Governments of the Overseas Dominions were resident in London, it might serve a useful purpose. One, and at times two, members of the Canadian Government were in London during the whole of the war of 1914-18. Improved air transport may enable the Prime Ministers, or a representative of their several Governments, to meet frequently in London or Ottawa or Capetown, Pretoria, Canberra, Wellington, or New Delhi, and with the aid of a permanent Secretariat maintain continuous consultation between the nations of the Commonwealth on all matters of common concern, thereby ensuring common action, alike in peace and war, in determining the foreign policy and relations of the Empire. A solution of the problem is possible. There are great difficulties to be overcome, as pointed out by Lord Milner, but the success of our statesmen in finding solutions for difficulties in the past is some guarantee of our capacity to meet the challenge of this new problem. "*All our past proclaims our future.*" The will to succeed ensures success and makes failure impossible even to contemplate. I have abiding faith that the genius of our statesmen will know—

" . . . the seasons when to take
Occasion by the hand and make
The bounds of Freedom wider yet."

EMPIRE PRIMARY PRODUCTS IN RELATION TO POST-WAR RECONSTRUCTION

By F. L. McDougall, C.M.G.

*Economic Adviser in London to the Commonwealth Government
of Australia*

WHATEVER THEORIES MAY BE HELD AS TO THE BASIC CAUSES leading up to the recent war, the economic difficulties and discontents of the between-wars period did much to provide the seed-bed from which came the poisonous growths of political hatreds. If, at the end of hostilities, we are to secure a happier future, we must be ready to deal with the difficult economic questions which will undoubtedly arise.

The agricultural problems of the world are at least as important as its monetary or industrial questions. Indeed, since probably over 60 per cent. of the world's population is engaged in agriculture, it may be claimed that the social and economic problems of agriculture are of primary importance. In spite of manufacturing development, consequent upon our war efforts, the countries of the Overseas Empire will continue largely to depend upon the exports of primary products for their balance of trade and payments. I, therefore, welcome the opportunity of directing your thoughts towards some of the problems which Empire producers may have to face.

I must, however, make it clear that I cannot attempt to discuss the whole range of primary products. These include agricultural products, that is to say, food and drink for human beings, feeding stuffs for animals, textile raw materials, such as wool, cotton and flax, then forest and plantation products such as timber, rubber, etc., also the metals and other minerals and, further, mineral oils. To attempt to discuss all these categories of primary products

would involve a general survey of world economic activity. I, therefore, propose only to discuss agricultural problems. My own experience has been largely confined to the products grown and exported from the Dominions. While, therefore, at a later stage in this paper, I shall have something to say about some of the problems of India and the Colonial Empire, it will be best if we start by considering the position from the standpoint of the Dominions.

The area of the four Overseas Dominions covers no less than 14 per cent. of the entire land surface of the world, but this area includes the northern wastes of Canada and the central deserts of Australia. The population of the Dominions, including the native population of South Africa, is only one-tenth as high a proportion of the world's population as their area is of the world's surface, namely, 1.4 per cent. Although the population is so small, yet the importance of the Dominions as sources of supply of agricultural products to the world is very considerable. This can be illustrated by referring to the figures of world trade in a few commodities in the years immediately preceding the recent war.

Canada and Australia together normally exported some 45 per cent. of the total amount of wheat entering world trade; the three Southern Dominions—Australia, New Zealand and South Africa—were jointly responsible for nearly 60 per cent. of the total world export trade in wool. Canada and Australia supplied the world with 38 per cent. of its imports of apples, while Australia and South Africa were responsible for 22 per cent. of the raisins entering into international trade. The three Southern Dominions exported 20 per cent. of the world's imported beef and 80 per cent. of its mutton, while Canada, Australia and New Zealand sent to world markets 49 per cent. of the total of cheese, and Australia and New Zealand together 40 per cent. of the world's imports of butter.

These figures show that the Dominions make important contributions to the world's food and to its wool supplies. On the

other hand, from a world standpoint, their exports were insignificant so far as feeding-stuffs and textiles other than wool are concerned. The figures I have quoted also show that the Dominions must inevitably be greatly concerned with the position of their trade in agricultural products after the war.

Is it possible for us to form any impression to-day as to what that position is likely to be? In order to attempt to answer this question, it may be as well briefly to consider what happened during and after the War of 1914-18. During the war there was an acute need for food imports into both England and France and for the Forces on the Western Front and in the Near East. Immediately after the war a devastated Europe had vital needs to be met.

While the effects of the war upon the four Dominions varied considerably, it resulted in a general stimulation of their economic development. Owing to her geographical position, this effect was most pronounced in Canada, where both agricultural and industrial production was markedly increased as a result of war demands. The relatively short sea voyage from Canada to United Kingdom Ports, and the organization of the Atlantic convoy system, led to an enormous demand for Canadian products.

Before the war, in the five years, 1909-13, Russia had been far and away the largest source of wheat supplies for the world, her average exports during that period being 164 million bushels. The United States came second with 110 million bushels, Canada third with 95 million bushels, Argentine fourth with 85 million bushels, and Australia fifth with 55 million bushels. In the five years between 1922-27, Russia's average exports became relatively insignificant, while Canadian exports rose to an average of 287 million bushels, a figure representing no less than a 200 per cent. increase over her pre-war average and almost 40 per cent. of the total net world exports for that period. The United States came second with 23 per cent., Argentine third with 17 per cent., and Australia fourth with about 12 per cent. I

should perhaps add, in parenthesis, that the changed position of Russia was not due to a decrease in her wheat production; indeed, in the later stages of the twenty years which elapsed between the two wars, Russian production had increased by 50 per cent. above the 1909-13 level. The fact that Russia was only exporting some 2 per cent. or 3 per cent. of her production instead of, as in the pre-war period, over 20 per cent., is something which should be placed to the credit of the Russian experiment, for it meant that, in spite of increased population, the Russian people were getting more to eat than under the Tsarist régime.

The effect of the war upon the Prairie Provinces of Canada is well illustrated by the fact that while the area sown to wheat in 1909-13 was 10 million acres, in 1922-27 it averaged no less than 22 million acres from which 390 million bushels of wheat was the average crop. Since the internal wheat consumption of Canada for food, feeding of animals and for seed is only about 100 million bushels, these figures show the immense importance which the world wheat market had come to assume to Canada.

Owing to the long sea voyage from Australia, the effects of the war were rather less pronounced upon her wheat production; nevertheless, she increased her acreage from $7\frac{1}{2}$ million acres to 10.4 millions.

While wheat affords an outstanding example of the war-time expansion of overseas agriculture, there were many other instances. In Canada, there was a marked increase both of dairy herds, of beef cattle and of pigs. In New Zealand, between 1911 and 1922, dairy herds were doubled, with a great development in the export of butter and cheese. The total cattle in South Africa and in Australia increased substantially, although the upward swing was not so great as in the other Dominions. Fruit-growing was largely developed in all the Dominions, returning soldiers planting orchards and vineyards, thus establishing the canned and dried fruit export trades. Poultry-keeping was also greatly expanded.

When the war came to an end, most European countries found their agriculture in a serious condition. Owing to the lack of manuring, the fertility of the soils was depleted, livestock had been slaughtered, both dairy herds and pig population being reduced to low levels, farm equipment had not been renewed and not only had stocks of food been exhausted but malnourishment had affected the physical well-being of the population, especially that of the Central Powers.

When it is further remembered that Russia, instead of being a great source of agricultural exports, of wheat, barley, butter and eggs, had, for the time being, ceased to export, it is not surprising that a tremendous demand for agricultural products from overseas developed as soon as ships could be released from war purposes to carry surpluses from the Americas, Australia and New Zealand to Europe. As a result the war-time trend towards increased agricultural production in the Dominions continued to be stimulated for a further five or six years.

This brings us to the stage when it is necessary to consider, in relationship to our whole problem, the depressing history of the twenty years which separated the two wars.

In 1919, the victorious Allies and the United States believed that the war had been "a war to end wars" and that their victory would "make the world safe for democracy." No adequate plans had, however, been formulated for the achievement of these great objectives. It is true that the peace settlement provided for the establishment of a League of Nations and thus for machinery which might have been adequate to deal with world problems. The statesmen who framed the Covenant of the League of Nations had, indeed, made provision for the consideration of political, economic and social questions. Unfortunately, however, the actual problems which were bound to arise had not been faced.

After four years of a far bloodier struggle than anything which we have since experienced, the nations longed for peace, and for a return to the happier conditions which had

prevailed before the war. The immense armies longed for demobilization and it became politically necessary to carry this out rapidly, quite irrespective of whether any plans had been made for the re-absorption of the discharged men into industry.

Immediately after the war, there was a short-lived boom, due to the special demand for consumption goods, including food, and for reconstruction. Once this boom came to an end, the nations were faced by serious problems of unemployment, and as the result, instead of plans internationally concerted to make this country, or any country, "fit for heroes to live in," Governments felt themselves forced to adopt short-term highly nationalistic policies. Such policies had to be improvised without much consideration of longer-term effects in order to safeguard employment, to maintain the peasants and farmers on the land, or to prevent currency depreciation.

It would be impossible in the course of one paper to attempt to discuss all these issues, but it is clear that during the two decades separating 1919 from 1939, national policies were dictated by fear. First came fears of the economic consequences of the lack of economic and social plans, and then, as the short-sighted policies began to have their inevitable effects upon political relations, fears of war.

We are all aware of the economic, and indeed the political, effects of the world economic depression which commenced in 1929 and lasted to 1934. It is perhaps not so generally realized that what has been called "The Agricultural Crisis" developed during the latter part of the first decade of the twenty years that separated the two great wars.

European agriculture was re-established after the war and as, in some minor degree, it adopted the improved methods already in use in many overseas countries, the world appeared to be faced by problems of over-production, although at the same time there was the clearest evidence of the continuance of poverty, under-consumption, and, indeed, malnutrition. The purchasing

power of agricultural produce in terms of other commodities remained low and, as a result, many European Governments felt forced to take steps to prevent a rural exodus. This led to extreme agrarian protection with consequent ill-effects both on standards of living and on international trade.

The effect of this agricultural protectionism upon prices and consumption has been the subject of many studies, of which one of the best was a memorandum presented by Sir Frederick Leith-Ross to the Economic Committee of the League of Nations and published by the Economic Committee as an appendix to the Committee's Report to the Assembly in 1935.

In 1924, wheat was admitted free of duty into Italy and Germany, and in France there was a low duty equivalent to 1s. 7½d. per cwt. In 1929, the rate in Italy was 4s. 6d. per cwt., in Germany 2s. 6d. per cwt., and in France 2s. 11d. per cwt. In January, 1934, the tariff barriers had been raised to 12s. 4d. per cwt. in Italy, 18s. 11d. in Germany and 10s. 1d. in France. All these latter rates of duty were far higher than the actual value of the wheat itself. The prices of home-grown wheat in these three countries by 1934 rose in Germany and Italy to 2¾ times the price of wheat on world import markets and in France to no less than 3 times that value. Similar effects were brought about by steep increases in duties on dairy products, meat, eggs and other agricultural produce. The inevitable result was a curtailment of consumption in the great centres of population in Europe and a heavy fall in prices in the exporting countries both in Eastern Europe and overseas with, of course, the consequent effect of decreasing the purchasing power of farmers throughout the world.

No useful purpose would be served by attempting to recount the story of the many attempts made by individual nations or on an international basis to find a solution to these problems. The World Economic Conference of 1927 strongly recommended a lowering of tariff barriers. Practically all the national delegations to the conference agreed that this was the desirable

course to pursue, but the Governments, faced by urgent internal political difficulties, found themselves compelled, not only to maintain their barriers, but often to increase them by the introduction of quota systems and exchange controls.

The World Monetary and Economic Conference in London in 1933 utterly failed to reach agreement on monetary or commercial subjects and only offered to an impoverished world agreements about the restriction of production.

It was experience of the constant failures to bring about an improvement in economic conditions that led the Australian delegation to the Assembly of the League of Nations in 1935, headed by Mr. Bruce, to propose to the Assembly that human welfare should be made the first consideration in the formulation of agricultural and commercial policies. With this intention, he asked the Assembly to agree that the Economic, Social and Health sections of the League of Nations should be instructed jointly to consider the relationship of nutrition to health, to agriculture and to economic policy. A similar initiative was taken by the Australian and New Zealand delegations to the International Labour Conference of the same year.

I shall not delay by attempting to give you more than the briefest account of the way in which these initiatives were developed. No less than twenty-five Governments established National Nutrition Committees. International meetings of representatives of these Committees were held in Geneva and in Buenos Aires. Although the movement encountered a considerable amount of obstruction, substantial progress was made. Unfortunately, however, by 1935, the deterioration in the political situation had gone too far for it to be arrested.

Although not only the peoples of this country and the Dominions, but also of many European countries, including those of South-East Europe, were becoming intensely interested in the consequences which would flow from correlating economic policy to standards of living. Governments faced

with the growing threat of aggression, felt that defence considerations must take precedence of all other factors. Even in their defence preparations Governments were not prepared to see that modifications of policy along the lines suggested by the nutrition campaign would prove beneficial to food supplies in time of war.

The work done, internationally and nationally, on the nutrition question will not, however, be wasted, for the experience gained between 1935 and 1939 will enable us to make rapid advances now that victory has been gained.

This survey has now brought me to the point when we can begin to consider the post-war problem. How far will the experience of the last war prove a useful guide? We shall have the same phenomena of an exhausted Europe, with depleted soil fertility, with reduced flocks and herds, with an under-nourished population and urgent need for food and for the re-equipment of its agriculture. We shall also have surpluses in the overseas countries and, at least on a short-term basis, a strong demand for food and raw materials. We may find that new difficulties have arisen about the means of payment for the necessary imports since industrial production will have made great strides in the Dominions during the war. We shall certainly have to face a new position in relation to the U.S.A. That country will have become the only significant creditor nation in the world, and it is of the utmost importance for us to remember that although we rightly regard U.S.A. as great industrially, yet within her boundaries there is an agricultural nation of some 6,000,000 farm families. The agricultural nation within the U.S.A. is more numerous than the entire population of all the Dominions, its production of wheat, maize, meat, pigs and fruit is also far greater than our joint output, and if efforts are made to organize American production on an export basis, the surpluses available for world trade may become an immense factor in post-war economy.

Although the very short-term post-war outlook for Empire

primary products may seem cheerful so long as Europe needs to replenish her empty shelves and to re-establish her agriculture, the more distant horizon is beset with manifold difficulties. These difficulties will have to be faced and means found for overcoming them. Success in this endeavour may well depend upon an early discovery of the best path to follow.

Little difficulty will be found in reaching the conclusion that, for the Dominions, a concentration upon economic nationalism would be futile. We undoubtedly emerge from the war far better equipped for industrial production, but with our manufacturing capacities distorted by a concentration upon aeroplanes, arms and munitions production. The majority of people who have been so employed will desire to continue in manufacturing industry. The whole instinct of the Dominions and their war-time experience will favour large-scale manufacturing units and high output per man employed. This must mean that the population of the Dominions will not provide adequate markets for our manufacturing developments, and hence that export markets must be sought. Turning to agricultural products, although there is some need for the increased consumption of milk, vegetables and fruit, the Dominions are, by comparison with most other countries, close to an optimum level of nutrition. Dominion farmers are anxious to adopt the latest teachings of science and thus to increase their production and reduce their costs. Reliance upon our own local markets can, therefore, be no sort of solution of our problems.

In 1932, the Empire, faced by the extreme agricultural protectionism of Europe and the Hawley-Smoot tariff of the U.S.A., turned in upon itself and attempted to solve its economic difficulties by inter-Empire trading. Shall we find in the post-war years that this is an avenue of escape from our major problems? The answer to this question cannot be given offhand, but it was already clear before the war that Empire markets, wide as they are, were too narrow for Canadian wheat, and Australian wool, and were becoming almost too confined for New Zealand and

Australian dairy produce or for Empire meat. In the post-war years the development of Dominion manufacturing will make the negotiation of reciprocal preferences a formidable problem. We have also to bear in mind that co-operation between the British Empire and the U.S.A. is, and will continue to be, the one hope of world security.

Under all these circumstances it seems doubtful whether we can hope to find in Empire trade arrangements the full solution of our economic problems. If, for the Dominions, policies based on self-sufficiency are hopeless and if Empire trading can be only a very partial solution of some of our difficulties, is there any other practicable alternative? The individualist free trader may reply that if international trade were freed from the barriers which impede its flow, all countries could enjoy far greater prosperity.

However true this may be, there is no prospect of a general adoption of free trade. The industrial countries are determined to maintain a prosperous agriculture, the agricultural countries desire the development of their secondary industries, and both will insist upon using the powers of the State to further these ends. We must, however, look forward to some decrease in the height and severity of the obstacles to a sane international division of labour for it is only on such a basis that we can hope to realize the greater *welfare* which science has made possible for all peoples.

I am going to suggest that in the word "welfare" we may find the right, and possibly the only, solution of the post-war economic problems. This brings me back to the standard of living, to nutrition, and to the work accomplished on these subjects between 1935 and 1939. President Roosevelt in his Third Inaugural—the first Third Inaugural ever delivered to the Congress of the United States—declared that "we look forward to a world founded on four essential human freedoms." He then cited freedom of speech and expression, religious freedom, freedom from want and freedom from fear. The President went on to say, "that is no vision of a distant millennium. It is a definite

basis for a kind of world attainable in our own time and generation." Freedom from want means sufficient food, adequate housing and clothing, reasonable leisure and the means for its enjoyment.

The Empire primary producer is directly concerned with food and the raw materials of clothing. Let us suppose that as part of the Peace Settlement the nations pledged themselves to adopt policies designed to bring public health to the standards reached in 1939 by New Zealand, Australia and Holland, and for this purpose to regard adequate food, housing and clothing as the foremost *desiderata* of their economic policies. If this were done, even by the nations of Western civilization alone, the effects upon world trade in primary products would be great indeed. A first consequence would be that the national agricultures of industrial Europe would need greatly to increase their production of the protective foods—and in particular of milk, fruit and vegetables—and arable areas would be more largely used to produce food for dairy cattle and pigs. Secondly, there would be an increased import demand for wheat, maize and other feeding-stuffs, for meat and dairy products, and for fruit, while more adequate clothing would sharply increase demand for wool and cotton.

It may be urged that, after the war, the nations will not be able to afford improved standards of living. This raises a most complex question to which I will only venture to suggest two possible answers.

Firstly, we should remember President Roosevelt's fourth freedom. He said, "the fourth is freedom from fear, which, translated into world terms, means a world-wide reduction of armaments to such a point and in such a thorough fashion that no nation will be in a position to commit an act of aggression against any neighbour—anywhere in the world."

If, in the Peace Settlement, we can give real meaning to this practicable aspiration, the nations, freed from enormous expenditures on armaments, will be able to devote a larger proportion

of their economic resources to social welfare. It should be difficult to maintain that, under such circumstances the nations could not find the means for devoting, say, 5 per cent. of the resources now demanded for the war effort to securing the health and well-being of their own peoples.

Secondly, I shall have the temerity to suggest that the industrial nations, i.e., Great Britain, Western Europe and the industrial States of U.S.A. and Japan, will find that they cannot afford not to find the means of placing a rising standard of living in the forefront of economic policy. My main reason for this is not because it will be demanded by the industrial workers of these countries, although that will probably happen. My reason is that, in the post-war world, the only way in which the older industrial countries will be able to find adequate markets for their enterprise and skill will be if there is a world-wide movement to improve housing, clothing, transport, and the enjoyment of leisure. Manufacturing industries are going to be far more widely diffused throughout the world and the industrial nations will have to become industrial specialists, producing the newest consumption products and largely relying upon their technical abilities for the export of capital goods if they are to retain their position in the forefront of world progress.

If it is true that the industrial nations will need to see world standards of living rising progressively, to see world demand for the amenities of civilization steadily increasing, it will be equally true so far as the Empire primary producer is concerned. I therefore suggest that President Roosevelt's third freedom—freedom from want, everywhere in the world—is our vital interest. If this vital interest is to be secured, we shall need to see in our own countries, and in all countries, economic policy directed towards optimum nutrition, better housing, adequate clothing and the other factors of social welfare. There will be great difficulties to overcome, but I suggest that it must be easier to secure a full sufficiency of the common things of life than to produce 2,000 aeroplanes a month, and to arm and equip new armies.

I have now suggested that the solution of the problem of the Dominion primary producer depends upon rising standards of living—everywhere in the world. I have further suggested that this is also the only solution of the impending difficulties of the older industrial nations. What, if any, difference is to be found in the long run interests of the Empire primary producer in India or in the Colonies? I suggest that the answer is simple. So far as the Indian or Colonial problem is one of production and markets, the solution is the same. A world determined to secure rising standards of living will need more tea, coffee and cocoa, more ground nuts or copra, more jute or sisal, indeed, more bananas. But in India and in most of the Colonies there is a great internal need for more adequate food and for the other factors of a minimum standard of social welfare. To a far greater extent than in the Dominions the internal problem demands a reorientation of agriculture designed to secure plentiful supplies of health-giving food to the producers themselves.

The application of the conclusions which I suggest we have reached is therefore in some ways easier in India and the Colonies than in the Dominions. In the former much can be done without international co-operation. So far as the latter are concerned, I believe that their future, whether as primary producers or as young industrial nations, depends upon world agreement to make real President Roosevelt's third freedom—Freedom from want—everywhere in the world.

NOTE

Since the reading of this paper, the conception of the United Nations has been evolved and then endorsed by fifty nations at the San Francisco Conference, where it was recognized that international co-operation on economic and social questions was an essential counterpart to co-operation for security.

Again, since the beginning of August, 1945, the use of the atomic bomb has brought home to all peoples the stark necessity

for international action on Security. This paper suggested that the interests of the British Commonwealth demanded the placing of welfare in the forefront of world economic issues. This conception has been accepted by the United Nations. In February, 1943, President Roosevelt endorsed the Australian initiative of 1935 by inviting the United Nations to their first Conference at Hot Springs, Va., where agreement was reached for World co-operation on Food and Agriculture.

This Conference also emphasized the need for action towards an economy of abundance based on "full employment" with rising standards of living. At San Francisco this conception was written into the Charter and the United Nations are now engaged on creating the machinery required for its realization. The economic effects of the war have been to increase the trend towards the industrialization of agricultural countries, and throughout the world it is being realized that the only way to avoid depression and unemployment is to utilize resources to give real effect to President Roosevelt's third Freedom—freedom from want, everywhere in the world.

CAPITAL AND COLONIES

By THE RT. HON. THE LORD HAILEY,
G.C.S.I., G.C.M.G., G.C.I.E.

Chairman, Colonial Products Research Committee

I RECENTLY CAME ACROSS A PASSAGE WHICH SEEMS TO ME TO make an admirable prelude to any discussion on Colonial Affairs. It runs as follows:—

“Colonial policy is the most searching test as to the development of a nation which attempts it. To see helpless people and not to oppress them; to see wealth and not to confiscate it; to have absolute power and not to abuse it; to raise the natives instead of sinking yourself—these are the supreme test of the national spirit.”

I clearly cannot proceed to-day to estimate the manner in which the spirit of the British people has met this test. I am concerned only with one aspect of our relations with the people of the dependencies, namely, the part taken by capital in the development of colonial areas. But even so, the quotation which I have read to you has some relevance, for no inconsiderable part of the judgments expressed on the moral aspects of colonial policy have turned on the part played by capital enterprise and our attitude towards it. The classic attack on Imperialism produced by the South African War, which, in Great Britain, had its foremost exponent in J. A. Hobson, affected to see the influence of the capitalist written everywhere in the history of Imperial expansion. It is true that Hobson did not agree that Imperialism was entirely economic at bottom; he admitted also the influence of motives which he charitably described as Pride, Prestige and Pugnacity. On the other hand, the Communist School of writers, drawing its inspiration from Karl Marx and

Lenin, found in the demands of monopoly capitalism the sole explanation for the expansion of Empires.¹

Imperial expansion, as many people, particularly on the other side of the Atlantic, seem sometimes to forget, has not been confined to the acquisition of Dependencies overseas. I should go beyond the range of my subject if I discussed here the influences under which Russia or China or the United States themselves have from time to time extended their land frontiers. So far, however, as the acquisition of overseas colonies is concerned, the Marxian philosophy clearly overstated the part which capitalist influences have played in the process.* There are undoubtedly instances in which they have supplied a direct incentive. Rhodesia may be a case in point, and possibly Malaya, and if we turn elsewhere, there are few Imperial moves of recent times which have been more clearly instigated by capitalist interests than Bismarck's annexation of the Cameroons in 1885. But many Colonies were acquired in a pre-capitalist period and some for purely strategic reasons. It used to be said that trade followed the flag, though in the British Empire, at all events, it would be more correct to say that the flag followed the trader. But it was not invariably the trader who led the way, and there has often been a genuine humanitarian or civilizing motive in the extension of our jurisdiction.

Nor can it be said that the Colonies have provided a field of exclusive or even exceptional interest for British capital enterprise. At various times there has been a larger investment in areas beyond British control—the United States, Brazil, Argentina, and the like—than in countries within the Empire; and within the Empire, the sums invested in the Dominions have been greater than those placed in the colonial dependencies. It is probable, indeed, that the private investments in the Colonies do not exceed 7 or 8 per cent. of the total British investment overseas. The Empire investment has—as has justly been remarked—

¹ For the Communist theories on Empire, see a useful study by W. B. Court-printed as Appendix I to Vol. 2 of Professor W. K. Hancock's "Survey of British Commonwealth Affairs."

shown a marked lack of concern with the political Empire. Nor has all outside capital invested in the British Empire been British; there has always been an open door for foreign capital in British territories.

I must not, however, dilate unduly on the older anti-Imperialistic or Marxian theories regarding the influence of capitalism on Imperial expansion. For us, at all events, the age of acquisition has passed. If anything can now impel us to the expansion of territory, it certainly will not be the prompting of the capitalist or the monopolist. But though we may now have to regard the problem of the use of capital from another angle, this does not mean that it is no longer a matter of concern to us. There are many who still see in it one of the principal elements in the "exploitation" of colonial peoples. Nor is our concern due only to the fact that the matter forms a controversial topic in colonial policy. It is clearly a subject which demands constructive thinking on other grounds.

No one can dispute the value of the humanitarian impulse which has in the past so often provided a corrective to practices which might have prejudiced the interests of native peoples. But we can no longer afford to regard policy as mainly an exercise in applied ethics. We now have a definite objective before us—the ideal of colonial self-government—and all our thinking on social and economic problems must be directed to organizing the life of colonial communities to fit them for that end. Social advance must be viewed as a pre-condition of self-government. Economic advance would fail of its real purpose if it were limited to securing an increase in the money resources available to a native population; it must be directed to raising the general standard of living—often a very different thing—and to the ultimate creation of the economic independence without which self-government is an unreality. It is in the light of this consideration that we must seek to determine the position of the capitalist and the proper function of capital.

Let me proceed, then, to consider these two points, and to

examine first the use of capital as a possible element in the 'exploitation' of colonial peoples. It is a cause for regret that in the study of colonial problems the application of the social sciences has hitherto received less systematic attention than that of the natural sciences. If, for example, the economists had devoted more attention to the characteristic problems of colonial economy, some of the terms commonly used in debating them might have been free of the ambiguity which now surrounds them. "Exploitation" is a case in point. As Professor Hancock has pointed out ¹ the word has in the English language a double meaning—the exploitation of natural resources, and the exploitation of human beings. The former, as he remarks, may be skilful and productive, or it may be the reverse, but the standards by which it must be judged are economic and not moral. The exploitation of human beings has, of course, an economic aspect; but English usage has tended to concentrate on the moral rather than the economic implications of the word. Exploitation, in this sense, has not been confined to Colonies or Dependencies; it has existed in every age and in a multitude of forms. What then are the distinctive marks of exploitation as applied to the relations with colonial or dependent peoples? I can perhaps best assist here by enumerating a variety of circumstances in which exploitation may be said to have occurred. They will embrace examples of both types of exploitation.

My illustrations fall into five groups. The first is that in which the resources of a Colony have been directly appropriated for the benefit of the metropolitan exchequer. History shows that this has been effected by diverting to the Home Treasury part of the proceeds of colonial taxation, or using compulsion for the production of precious minerals or certain types of export crops for the benefit of the Home Treasury.

The next group is that where the object is to gain special trade advantages for the nationals of the Colonial Power by trade discrimination, shipping preferences, or the like. The primary

¹ See work above quoted, pp. 20-21.

result of this procedure is, of course, to place the trade of other countries at a relative disadvantage, but it may clearly involve also a prejudice to the interests of the colonial population, since it may reduce their power to import essential articles of consumption or capital goods necessary for their development. Tariff policy designed to favour home manufactures may also have a detrimental effect by preventing the development of secondary or other industries necessary to the growing economic life of a Colony.

The third group is that in which a colonial administration uses methods of compulsion to secure labour under improper conditions for its own public works or utility schemes. Here, though the aim is not predatory, the result may nevertheless amount to a form of human exploitation.

The fourth group is that in which writers on colonial questions have found some of the most classic examples of exploitation. It includes cases in which monopolies or concessions given to foreign enterprises have allowed them to secure native labour or to appropriate native production on inequitable terms, or, again—and as I shall show later, this is of equal importance—permits them to operate on conditions which fail to ensure to the revenues of the Colony an adequate return for the assets or facilities conceded. It includes also cases in which, though no monopoly or other special rights have been conceded, the administration has assisted or permitted capital enterprises or settlers to recruit or employ labour on inequitable terms or in conditions which prejudice the social organization of native life.

The fifth group comprises cases in which the administration has alienated native lands or permitted native authorities to alienate land to foreign enterprises or settlers to an extent which deprives the native population of areas necessary for its proper development. We must perhaps include here also the cases in which an administration permits foreign trading interests to acquire a position which prevents natives from taking their due part in building up the economic life of their own country.

The list is a formidable one, but as you will realize my illustrations have been drawn from a wider area than the British Colonies, and many belong to a period which is now happily past. That is in particular true of some of the cruder practices, as for instance, that by which the resources of a Colony have been diverted to the benefit of a metropolitan exchequer. As you will also have seen, the list includes many practices in which the interest of the capitalist, or the uses to which capital is put, do not necessarily form an element. I must, then, proceed from the general to the particular, and attempt to distinguish those uses of capital which are necessary and beneficial from those which can be described as partaking of exploitation.

There are in the Colonies circumstances which give unusual emphasis to certain of the functions which capital can normally discharge. Consider, in particular, the equipment with which most of those areas have entered into modern economic life. Many had valuable mineral deposits, but they were largely unexploited and indeed unexplored. Their agricultural production was mainly of a subsistence type, and was not, therefore, calculated to provide the surplus income which could create revenues for the upkeep of State services or the capital for collective or private improvements. They had practically none of the communications or other public works or the small industries which have formed the accumulated heritage of communities elsewhere. Moreover, in developing the life of any country, the non-material or personal equipment of the people is not less important than the material, and it was here that the indigenous population of the Colonies was most deficient. It had not developed either the social institutions or the craftsmanships or the spirit of individual enterprise which, even more than material resources, have been the real basis of development in the modern world.

Those who were responsible for the Colonies had, therefore, a double task before them. The deficiencies of material equipment had to be supplied by the construction of public works, and those

of non-material or personal equipment had to be made up by the creation of educational, health, social or welfare services. Further, if the general standards of life were to be raised, means had to be found for mobilizing the latent mineral assets, or for improving agricultural production, not merely for nutritional purposes, but in order to secure the surplus income necessary to support State services and to build up private capital resources.

Capital for these purposes clearly had to come from outside, for at the outset the only contribution which most of the Colonies could make was not in the form of capital, but of unskilled labour. But the use made of capital met at the same time another essential need. The revenues available for the expansion of the social and welfare services of the administrations were inevitably limited. In many cases there was, in effect, little which could be taxed, particularly where a money economy as yet hardly existed. It is recorded that in one area of Africa the only payment that could be made towards a newly imposed poll tax was the offer of a batch of crocodile eggs. It was not until the application of outside capital had made the profits from mining enterprise or the export of agricultural products available for taxation that the administrations began to find the finance necessary for the extension of their social services. The hospitals and schools of Malaya have in truth been the creation of its tin and rubber industries; the social services of Northern Rhodesia depend mainly on the profits of the copper mines; and those of the Gold Coast on the organization of the trade in cocoa, and on the profits of its gold and (more recently) its diamond mines. It is a general experience that the standards of native life tend to be highest in areas which have seen the largest introduction of outside capital.

These observations may appear to be largely in the nature of truisms; but in the technicalities of economic debate the more obvious facts often tend to be overlooked. It is, however, at this point that we come in contact with one of the most crucial points in the consideration of colonial policy and one which undoubtedly involves a technical problem of some complexity.

Given the fact that development was so largely dependent on external capital, how far should this have properly been undertaken by the State and how far left to private enterprise? There are two separate issues involved here. To what extent, in the first place, did the administrations judge correctly of the scope of their capital expenditure on what may be described as public utility works? In the second place, how far should they have extended their use of public capital to the direct promotion of industry or of agricultural production?

As regards the first issue, it is usual to say that the policy of colonial development was determined at the outset by the dominance of *laissez faire* principles. Many things have been said about the doctrine of *laissez faire*, though it may well be doubted whether such a doctrine ever really existed. But it is nevertheless true that the philosophy of the time took a different view of the responsibilities of the State, and of the relative functions of government and of private enterprise from that which is common to-day. It was in accord with the spirit of the times that the Home Government not only felt no direct responsibility for contributing to expenditure on colonial development, but took a restricted view of the objects on which public capital should be expended. It confined itself for the most part to guaranteeing loans raised by the Colonies, or on rare occasions gave Treasury advances to them. The total public expenditure for capital purposes has in consequence been on a scale which, considering the needs of the areas involved, is far from considerable.

It is not possible to give the public outlay from all sources on public works, but it is significant that the total outstanding public debt of the Colonies (including for this purpose the Sudan) is to-day only of the range of £120,000,000, though the amount invested is actually much higher, since substantial loans have already been paid off. Of the public debt, about £100,000,000 has gone to the construction of railways and ports¹—a sum

¹ See pp. 275-282 of "The Colonial Problem" (Royal Institute of International Affairs, 1937).

which would presumably have been far smaller if the State had found private capital prepared to undertake this type of enterprise.

We may well feel that it would have been of benefit to the Colonies had a more comprehensive view been taken of the scope for the use of capital by government. Capital expenditure on material development can neither give a full commercial return nor make its full contribution to the national economy unless it is possible at the same time to produce the social and intellectual changes in the population which will enable it to make an effective use of the material equipment provided. That is true everywhere; but, as Dr. Frankel has shown in his valuable study of investment in Africa,¹ it is of far greater significance in the development of primitive than of more advanced societies.

Expenditure on improving subsistence production or on extending health and education services is remunerative not merely in a moral but also in an economic sense. The difficulty of course, arises that the return to capital expenditure in this direction is not necessarily immediate, and when it has to be met from loan funds, the service of the debt may involve in the meanwhile an undue burden of taxation. I will not examine in detail the present ratio of the cost of the debt services to the total public expenditure of the British Colonies. It may be said, however, that in only one or two cases is this noticeably high, and nowhere is the burden as heavy as it is, for instance, in the case of the Belgian Congo.² But I note with interest that in the recent study of colonial policy by the Executive of the Labour Party³ it has been proposed that the United Kingdom should assist colonial development by the liberal grant of interest-free loans, as a supplement to the assistance given under the Colonial Development and Welfare Act of 1940.

¹ "Capital Investment in Africa—its Course and Effects" (Oxford University Press, 1938).

² See Frankel, pp. 170-188: "The Colonial Problem," p. 339.

³ "The Labour Party's Post-war Policy for the African and Pacific Colonies." (March, 1943) p. 16.

The whole question of the scope for capital expenditure by government in the directions I have named must, I suggest, form an important issue in the consideration of our post-war policy. I may add here that some question has arisen also regarding the procedure by which colonial loans are raised in the open market. They have, of course, been obtained on far better terms than those secured by many of the smaller European nations, or parts of Latin America or by some Asiatic countries. A recent analysis shows, indeed, that they bear a not unreasonable relation to the terms of the United Kingdom public loans; but it has been urged that the present system has features which demand consideration. The issue is, however, largely technical, and does not involve any major question of policy.

I come now to the second issue—the extent to which the State has used its capital resources for the direct promotion of industrial or agricultural development. To a considerable extent, the type of capital works financed from loan funds may be said to have favoured the interests of foreign capital enterprise and the export trade. But it was inevitable that the administration should consider in the first instance the types of development calculated to produce a return which would meet the interest charges on the debt, and also add indirectly to the sources available for local taxation. The service of mining areas and the transport of export production were the most obvious sources of this nature. Let us be clear also that export trade cannot be described as a non-native interest. That is far from being the case. It only ceases to be a native interest at the point at which it absorbs activity or diverts services which should properly be devoted to nutritional production or the promotion of internal trade.

In only a few instances, however, has direct assistance been given by the governments to industrial development, as, for instance, in the forms of loans to mining enterprises or assistance in starting local industries. Nor have the administrations, save in very rare instances, of which the Nigerian coal mines and the working of the potash deposits in Nauru are perhaps the most

noticeable, undertaken industrial enterprise on their own account. Here, again, is a question which must form an item in the consideration of our post-war policy, all the more because the war has created new conceptions—or at all events modified the older practice—in regard to the functions of the State in industrial and commercial development in Great Britain itself. There are to-day many who consider that the State should now take a much more extensive share in industrial and economic development in the Colonies. Their objective is only partly economic. They see, indeed, in State activity the best method of securing the profits of mining and similar enterprise for the use of the community at large. But they also look on it as the best means of ensuring improved conditions of life for wage earners, for preventing developments which will prejudice the native social organization, and for guaranteeing that natives are not debarred from advancing in industrial life by colour-bar discrimination.

I need hardly point out how far-reaching are the considerations involved. The character of the present official establishment must be radically changed if it is to undertake an activity so far outside its present work. The resources of the Colonies are ill-adapted to stand the delays and the losses which the more speculative types of industry inevitably involve. Those who advocate this extension of State activity doubtless have their eyes fixed on the more conspicuous industries, such as mining; but it is clear that unless we are prepared to substitute a completely Communist régime, there must be a very wide field, outside those industries, in which development will still depend on the provision of private capital. There is a further consideration which is often overlooked. Where the State raises capital for such purposes, the service of the debt creates a fixed charge which has to be met whatever may be the return which the investment itself may give. This becomes additionally onerous if the capital is raised abroad, when the people of a Colony may at times find themselves compelled to export two or three times

the amount of produce which would satisfy the obligation in normal years. In this respect, of course, the system of equities by which private capital operates offers a definite advantage.

Whatever the decision on the question of general policy, there are admittedly certain issues which must in any case come up for decision. Thus the Secretary of State has recently given his support to the widely held view that we should envisage the growth of local industries in the Colonies. Are the governments to assist this movement, either by providing capital for the purpose, or by starting experimental industries? It is noteworthy that war needs have already led some of them to take a number of steps in this direction. But as regards the major issue, I personally feel doubt whether the substitution of public for private capital in industrial or commercial development is likely to go to any considerable lengths in the British Colonies. Let me suggest, at least, that it would be well to defer any wide movement of this character in the Colonies, until we have settled to our own satisfaction the part which the State is to take in the industrial and commercial life of Great Britain.

Our colonial tradition, like that of the French, differs from that of Belgium, which has led to the direct participation by the State in almost every aspect of the industrial development of the Congo. We must no doubt envisage the fuller application of the practice by which the State shares with private capital in certain types of agricultural development (as it has done, for instance, in the well-known Gezira project in the Sudan) or by which it assists in the formation and the direction of public utility companies providing transport, water facilities and the like. Here it can clearly operate with advantage. But for the rest, it is probable that, with us, government activity is likely to be limited to a closer concern with the conditions in which private capital operates. What, then, are the objectives to which policy must be directed in this respect?

That which should claim our first attention must, I think, be the progressive substitution of domestic for outside capital. It is

not possible to state with accuracy the amount of external private capital invested in the British Colonies. An estimate made a few years before the war indicated that private investments from external sources were of the range of 250 to 260 million pounds, but this calculation did not take account of considerable sums, such, for instance, as money brought in by settlers, or investments by firms which do not publish accounts.¹ Nor did it take account of the profits ploughed back into the business instead of being distributed, and whether these are to be correctly regarded as external or internal capital, they would make a very considerable addition to the figure I have quoted. There are, again, no means for determining the amount of capital investment from local sources, but though this may be of considerable amount in Ceylon, Hong Kong, the Straits Settlements, or to some extent in the West Indies, it is probably of small account in most other Colonies. The strongest stimulus to investment of external capital on any systematic scale has probably been mining; it is calculated, for example, that of the capital invested from abroad in Africa, no less than 66 per cent. has found its way into what may for convenience be described as the "mining territories."² The use of outside capital for "plantation" development has, in modern times, been mainly confined to Malaya and Ceylon. It is significant that there has hitherto been relatively little expenditure from this source on factory development, save in the Straits Settlements, Palestine and Hong Kong. Taking the picture as a whole, it is possibly true to say that of the private investments some 90 per cent. represents external capital, predominantly British in origin.

It is not necessary for me to dilate on the political aspects involved in the relation thus created. Foreign borrowing has, of course, been the ladder by which more than one country has climbed to economic independence; perhaps the most notable modern instances are to be found in our own Dominions. But

¹ "The Colonial Problem," p. 284. See also Sir R. Kindersley in the *Economic Journal*, 1929, pp. 8-24.

² Frankel, p. 213.

most of these countries have been in a position to safeguard themselves against the danger that the economic dependence of the borrower should invite political intervention on the part of the creditor; and they were in particular in a position to assist the accumulation of internal capital by the protection of their domestic industries. The practical conclusion is clear. If we hold seriously to our idea of self-government for the Colonies then we must work consciously towards a situation in which they will be far less dependent on the supply of capital from us. But that will not be the result of any single measure. If India has to-day achieved her independence of external capital, it is the result of a long series of achievements in almost every field of administration, by which her internal trade has been stimulated, her latent credit resources mobilized, and her major industries finally built up under a system of protection.¹

I pass then to what must be our second objective, namely, to secure that so long as outside capital is employed, it should operate under conditions most beneficial to the people of the Colonies. This is a question which many seem unable to discuss without a certain access of emotion. No one would deny that there have been grievous abuses by capital interests in the past, from the days of the slave-trade or of the Congo concessions onwards. There is no suggestion that abuses so gross as these exist to-day. But how often are we not asked to-day to contrast the high dividends earned by the gold mines of West Africa, or the copper mines of Rhodesia, with the wages paid to their native labour? How often do we not hear of the vast sums said to have been won on the London Exchange by shady trafficking in concessions given by chiefs in Ashanti or administrations in East Africa? My own interest here is only to attempt to find some standard for judging where the operations of private enterprise are actually a prejudice to the welfare of colonial peoples.

It is unfortunate that we have no means of determining the

¹ For an account of this process, see "The Development of Capitalist Enterprise in India," D. Buchanan. (New York.)

general return of colonial investment to the capital involved. Any such calculation would naturally have to take account not only of the gains but of the losses, and we must make allowance also for the fact that a great part of the capital—notably that employed in mining—may be engaged in exploiting a wasting asset. Such material as we possess suggests a warning against concentrating attention on the more sensational profits earned by certain enterprises. It is true that in the 69 years between 1867 and 1936 the diamond producing companies of South Africa paid dividends of over 80 million pounds on the 20 millions of capital engaged. On the other hand, Dr. Frankel has calculated that the mean average yield of the capital invested in the Rand gold mines between 1887 and 1932 was only 4.1 per cent.¹ During the 52 years of its career, the British South Africa Company has paid a mean average dividend of 2.1 per cent. on the capital engaged; the British North Borneo Company has paid 1.9 per cent. An analysis of the figures of two Northern Rhodesia copper mining companies, whose recent high dividends have often been the subject of comment, shows that the shareholders have received a mean annual dividend of 7.9 per cent.—not an unduly high figure for a wasting asset.²

I quote these cases only as illustrating different types of enterprise. I cannot anticipate the result which might emerge from the analysis of a full range of figures, nor the relation it might bear to the return made by a comparable body of investment in areas outside our political control. We must realize, moreover, that whatever significance the mean return of investment may have for us, it is not the only consideration with the investing market. Where investment is of a speculative character, as most frequently is the case in mining and similar operations, it is the prospect of the occasional prize which mainly influences the flow of capital. The ideal world of business would no doubt dispense with this inducement; in the world of to-day the spectacular

¹ Frankel, pp. 53 and 91.

² See also the cases quoted on p. 24 of Major Orde Browne's Report on Labour Conditions in Ceylon, etc. (Cmd. 6423).

return is not without its value. Our own concern, however, must be to see that profits are not earned by "exploiting" human resources in the employment of labour, that they do not involve a misuse of natural assets by wasteful methods of winning minerals or extracting forest produce, and, lastly, that they make an adequate return to the revenues of the Colony.

Let me take the first of these points, the terms on which labour is employed. I suggest that here the test is not so much the relation of wages to profits, as the degree to which the conditions of employment permit of a reasonable improvement over the usual standards of native life. Taking the Colonies as a whole, the labour employed by foreign capitalist enterprises is only a small proportion of the whole population. To remunerate this relatively small class on a scale out of proportion to the general standards would certainly be no gain to the social structure, and might prejudice the development of indigenous enterprise dependent on wage labour. If a business, after paying wages which adequately meet the test suggested, can still make high profits, then the proper course is to collect part of the excess by taxation, and to make it available not for the benefit of the particular labour employed, but for the community at large.

Critics can, I think, justly charge us with neglecting at an earlier stage to give adequate attention to the conditions of labour. We can, however, claim that recent years have shown a noticeable change of outlook in this direction. We have passed more than three hundred Acts dealing with labour questions, particularly in regard to facilities for collective bargaining by wage earners, and in most Colonies we have instituted a Labour Inspectorate. Nor would it be right to overlook the efforts made by many private enterprises in recent years to improve the conditions of labour. There are, indeed, many instances where the dieting and housing of their employees are to-day superior to those of labour employed by government and local bodies. But though much progress has been made, it would be wrong to speak in terms of complacency of what has been effected, for

there is in many areas a great deal of leeway to be made up, particularly in regard to housing and health conditions, the fixing of minimum scales of pay, and in certain cases also the removal of colour discriminations. In these respects, we must press forward with firmness and resolution.

It is, I think, the measures for securing a due proportion of the profits of private enterprise for the benefit of the community at large which now demand further consideration. There are various methods by which this can be effected. One method is for the State to become a partner in the equities of an enterprise; the private investor provides the working capital; the State holds shares, the amount of which is based on the potential value of the mineral or other concession involved. That, in principle, is the method adopted in the Belgian Congo, and it is the basis also of the system followed in the more recent legislation regarding gold mining in the Union of South Africa, which has made a very extensive study of this question. A second method is for the State to make use of the system of dead rents or of royalties, either fixed, or dependent on out-turn or profits. These two systems are, however, chiefly applicable where the State either holds the mineral rights or gives a concession or franchise in some special field of trade or production. The State can, thirdly, take a share of the profits by direct taxation.

It must be admitted that in certain areas we did not at the outset see the possibility of a departure from the traditional British conception which gives the surface owner rights over mineral deposits. Our later practice has been to secure such rights to the State. It is again clear that the terms on which royalties were originally fixed have proved to be unduly favourable to some enterprise, and have involved material loss to colonial revenues. Our more recent practice in regard to royalties, as, for instance, in the diamond and mineral concessions given in West Africa, has paid far more regard to the potential value of the assets made over to the companies concerned, and has produced a valuable addition to the finances of the Colony. It must

again be admitted that it is only of recent years that some of the colonial administrations have imposed an adequate rate of income tax on the profits of companies, and in more than one instance this has only been effected by direct pressure from home. But with a few exceptions, all Colonies now have an income tax; in the more important, the rate payable by companies varies from 4s. to 7s. 6d. in the pound. In some cases it goes up to 10s. in the pound.

There are many technical problems arising in regard to the application of the alternative systems by which a share in the profits of private enterprises is, or can be, secured for the benefit of colonial revenues. The complexity of conditions demands an unusual degree of flexibility in procedure. A special issue arises in connection with the income tax levied by the United Kingdom and the Colony respectively on the profits of companies operating in the Colonies, but registered in this country. The system by which they obtain relief from double taxation is no doubt equitable, but it may be debatable whether the actual distribution of the gross tax as between the Home and Colonial Treasuries pays sufficient regard to the fact that the bulk of the operations by which a dividend is earned are conducted in the Colony.

I suggest that the whole question of the methods by which a Colony should obtain an appropriate share of the profits of private enterprise must now come under review. But I hope that this will be carried out in a realistic spirit, and with a due sense of discrimination between moral and economic issues. Our primary consideration must, of course, be the welfare of the Colony and not the interests of the investor. But so long as the welfare of the Colony continues to demand the use of foreign capital, we must be careful to avoid measures which might dry up the source from which it comes.

The capitalist has obligations towards the labour he employs and the society to which it belongs. The administration has an obligation to safeguard the interests of that society, and the financial resources of the Colony. If these obligations are ade-

quately discharged on both sides, then our conscience need not be unduly troubled if capital still makes its profits. We must, again, do everything to prepare the way for the day when the Colonies will become more independent of the supply of external capital. But when that time comes, then, so long as we remain in any position of control, we must be equally careful to see that the domestic capitalist and the colonial administrations discharge their mutual obligations. Exploitation is not, as I need not remind you, the special prerogative of the external capitalist. Unless we can establish a good tradition in these matters, the future self-governing Colonies may well suffer at the hands of domestic capital an oppression which foreign capital would in present conditions be powerless to practise.

THE PROJECTION OF GREAT BRITAIN ON THE COLONIAL EMPIRE

By SIR ANGUS GILLAN, K.B.E., C.M.G.

Director of the Empire Division of the British Council

THE PROJECTION OF GREAT BRITAIN ON THE COLONIAL EMPIRE IS an inevitable concomitant of the Imperial connection. Settlers, traders and missionaries have all reflected on the inhabitants of the lands to which fate led them some aspect of Great Britain and of what she stood or stands for. The soldiers and administrators who preceded or more often followed them, or who in some cases arose from their midst, set the official seal on the British connection. And, in effect and more authoritatively, they said, "We are Great Britain come amongst you. Henceforth what Great Britain is and does touches you and cannot be without effect upon you." For better or worse the projection of Great Britain on these countries thus became an accomplished and continuing factor in the lives of their peoples.

But until very recent years this projection as a means of interpretation was largely unconscious and non-deliberate, certainly unplanned. The individual settler or official might feel it incumbent on him as a British emissary not only to act in a manner creditable to his country but to endeavour to explain the why and the wherefore of this country's mission. But the majority, not unnaturally, thought mostly in terms of the interests of themselves or of the country of their sojourn or adoption—of livelihood to be made, of souls to be saved or bodies to be healed, of justice to be done or peace to be preserved—of the job in itself rather than of the projection through themselves of British aims and ideals.

The home attitude to the colonial connection has passed

through many phases varying from an active expansive urge of Elizabethan adventure or nineteenth-century humanitarianism to little-Englander defeatism, from flag-wagging to apathy. But even the pro-colonial school was content to feel, or if necessary to see to it, that the job in hand—its commerce, its administration, its missionary or education enterprise—was being done by its agents on the spot. If it thought at all in terms of their representation of British aims and ideals it said to itself, in effect, "By their fruits ye shall know them"; that seemed sufficient answer to any questionings. The need for a more deliberate and planned interpretation abroad—whether in foreign countries or within the Empire—of what we believe that Britain stands for is a comparatively recent realization.

In olden days, and to-day in backward parts, this lack of imagination as regards the Colonies did not and does not much matter. Among primitive and uneducated people men are judged by their actions and this judgment may be taken to include their countries. Britain, by and large, sent out just men to rule or to work in the Colonies. Britain therefore was the fount of justice. And it would be gross ingratitude not to give the fullest credit to the men—and women—who made Britain known by their works. One of our greatest Imperial assets has always been our ability to get on with, and to gain the confidence of, backward peoples. During the stage of pacification (where it was necessary) and the building up of rudimentary civilization, this confidence and the prestige which it established were sufficient unplanned propaganda on behalf of Britain. But the man on the spot is apt to forget how quickly his children are growing up. As long as all is quiet, as long as justice is done, as long as the A. B. C. is properly taught, all must be well; and he would be well content that it should remain so—which obviously it cannot.

The fact is that, for reasons which it would be outside my scope to-day to analyse, we do not, in general, feel as much at home with our own educated product as we do with its uneducated fathers and brothers. We are apt to forget that as we

give education, as we enlarge the horizon of the more backward peoples, we cannot expect them indefinitely to take for granted the benevolence of our mission. If we are to retain their confidence and friendship we must show them its background, its why and its wherefore. We must give them a share in it, and we must demonstrate clearly and without condescension the rational and spiritual advantages of the British connection. It is not enough to give them an education from Britain; we must accompany it with an interpretation of Britain. And it is here that we have often rather dismally failed to see the true light.

I am going to talk about this interpretation of Britain to the Colonial Empire largely in terms of the work—or rather the aims, because the work is still in embryo—of the British Council. The Council neither holds nor claims any monopoly in its interpretative mission. Press and cable services, broadcasting, books and periodicals, all provide mirrors for the reflection of this country. Government information services and Empire societies are now alike playing a more active and positive part. And, as I have said, traders, settlers, missionaries and even tourists (not always to our benefit) all create some impression of the country of their origin on the people with whom they come in contact. But many of these contacts are casual and fortuitous, and whether beneficial or otherwise their interpretative capacity is mostly limited to some special aspect. And in the case of Government agencies and information services, valuable as their work undoubtedly is, it is apt to suffer from the suspicion which, even in less sophisticated circles, has attached itself to anything savouring of official propaganda.

There is, indeed, a new vision abroad in the work and spirit of the colonial administrations and, if I may venture to say so, in the Colonial Office. Enormous progress has been made since the days when Lord Hastings wrote that British Officials were “too dry with the natives, who give us high credit for justice but I fear they regard us in general as very repulsive,” or when Sir John Malcolm complained that “Our administration, though just, is

cold and rigid. If it creates no alarm, it inspires little, if any, emulation. The people are protected, but not animated or attached." The creation of a fuller and wider understanding of the British way of life and of the spiritual and cultural value of the British connection, the animating and attaching of the people for whose material destiny we have accepted responsibility—these form a task for which there is an urgent need—a task which can and should be carried out in co-operation with the administration and with any and every other sectional agency of goodwill. But it is a task which can best be inspired, planned and co-ordinated in an atmosphere free from the inhibitions of officialdom and the stresses of vested interests. It is this task which I believe it is the privilege of the British Council to endeavour to fulfil. It was, in fact, for the fulfilment of the task of which this is a part that it was called into being.

To support this claim it is necessary to say something about what the British Council is. But to clear away any misunderstandings let me first say what the Council is not. It is not a political body. It is not a sectarian or commercial body. It is not a Government organization though it enjoys the moral and financial support of His Majesty's Government. It has nothing to do with war propaganda which is the function of the Ministry of Information. It was called into being in 1934—would that it had been 50 years earlier!—on the initiative of the Foreign Office, acting with the support of a number of other Departments of State; and under the terms of its Royal Charter it exists "for the purpose of promoting a wider knowledge of the United Kingdom of Great Britain and Northern Ireland and the English language abroad and developing closer cultural relations between the United Kingdom and other countries for the purpose of benefiting the British Commonwealth of Nations."

The Council's aims, to put them briefly into common language, are to project or interpret abroad British life and thought, the history and traditions of Britain and its modern progress and achievements, British political institutions and social services, our

arts, our sciences, our industries, and even our sports—in short, the British way of life. It does not seek to cram these ideas down other people's throats on regimented lines of Nazi "New Order" or Japanese "Co-prosperity." It only seeks every opportunity, through its own machinery and through any other willing agency, to make us better known abroad. It says, in effect, "This is the way we live, the way we govern and are governed. These are the things we do, and this is the way we do them. We don't ask you to live this way, but we may have some contribution to make to our common civilization. Take what you like and leave the rest." And you will have noticed that the Charter includes the objective of developing cultural relations *between* the United Kingdom and other countries. Our primary purpose is to interpret the British way of life abroad. But a one-way traffic is not enough, and our Charter gives us a mandate at least for the encouragement of a reciprocal traffic from other countries—of what has been aptly called a commerce of ideas. When we say to other countries "This is how we live and how we think and what we do. We hope it will interest you," we also say, "Will you not now tell us more of your way of life, of your ideals and aspirations? We can learn lessons from them, and we shall do what we can to help you to make them known among our people." The creed of the British Council is that mutual understanding is the basis of mutual tolerance on which alone can be built a sure and lasting peace among the nations.

It is perhaps significant of our national lack of imagination, complacency, or call it what you like, that even when a realization came upon us of the need of a planned cultural interpretation of Great Britain abroad its application to the British Empire was the last to be considered. It is clear from historical documentation and it is inferred from the terms of the Charter that the countries of the Empire were not to be excluded from the mission of the Council. But the original initiative came from the Foreign Office, and in the early days the meagre resources placed at the disposal of the Council made it natural, and perhaps inevitable, that its

The direction of the British Council's work abroad had hitherto been based on considerations applicable to, and derived from experience in, foreign countries. Its local organization varies considerably according to the conditions obtaining in the territories in which it may be working. But in the Mediterranean area, in which the first colonial experiments were undertaken, the focal point is generally the British Institute staffed and run, under the general guidance of the Council's territorial representative, by a Council-appointed director, lecturers and teachers. One of its main functions, in fact one might almost say its basis, is the teaching of English. It stages debates and lectures. It provides a library. It holds, or if it is too small it arranges elsewhere, exhibitions of British films, books and arts, and performances of British drama and music. It is, in fact, a little British cultural colony in a foreign land to which all those interested are welcomed. But the cultural goods we exhibit are ours and not theirs, and we are free to say "take them or leave them."

When we come to Empire countries the fundamental difference is that we are not working on foreign soil. Making allowance for every conceivable difference in race, origin or constitution, there is in all of them something British; and in bringing Great Britain to them we are bringing to them something in which they already have a share. This both simplifies and complicates the problem. We can presume a pre-existing sympathy with British traditions and culture even though accompanied in some cases by a suspicion of British policy. We shall not run the risks which we do in foreign countries of being suspected as political propagandists or camouflaged secret service agents. On the other hand, we shall have to guard very carefully, especially in the Dominions, against giving any impression of highbrow patronage and condescension. And in the Colonies we must remember, in particular, that we cannot project a true picture through a colour-discriminating lens.

The course of transition from paternal autocracy to the

equivalent of Dominion status will proceed at different rates and will adopt different forms according to varying conditions; but it is now a cardinal axiom of British policy that it is our duty to develop the Colonies on lines leading to eventual self-government. This aim is coupled with the hope that they, like the present Dominions, will of their own wish remain within the British Commonwealth. It is to this end that the British Council may be able to do some of its most useful work in promoting an appreciation of the cultural and spiritual values of the British connection and a mutual understanding based on these.

Our methods must therefore be in conformity with the spirit of British policy. We should not, I believe, normally bring them British Institutes—they are British already. But they have also an identity of their own, the development of which it is the policy of H.M. Government to encourage. As they have their own local governments, so they should have their own cultural societies or institutes—not a British Institute, but a Lagos Institute or a Trinidad Institute. Wherever possible our aim should be to assist an existing institute, cultural society, or library rather than to superimpose an institute of our own even under a local name. And where for want of a suitable existing nucleus we plant an institute of our own, I should prefer to associate with it from the start a representative local committee, even if at first it is more or less of a façade. The existence of such a committee, besides being in consonance with the principles of democracy, will point to the fact that the institute is something belonging to the people themselves and is not an extraneous (even if British) imposition. We want them to feel that it is through them that we seek to spread the light, and that it is they who are providing a common ground where men of goodwill of any race or colour can meet, without the restraints of host and guest or of office correctitude, to exchange ideas and discuss mutual problems.

In the past year, in spite of staff difficulties, we have extended our field to the West Indies. We have carried out a survey of opportunities in West Africa where we hope to send staff very

shortly. We are hoping before long to make a start in Mauritius, and we are making a tentative survey in East Africa.¹

Now I am not here to talk about the British Council as such, but about the projection of Great Britain to the Colonies, of which the Council is but one of the means. It may, however, be worth while giving a very short sketch of the headquarters machinery employed by the Council towards that projection.

I have mentioned the Empire Division which supplies what might be called the political directive and which is in very close, and I think I may say friendly, touch with the Colonial office. The Foreign Division does not concern us here, but I must mention the Home Division whose work touches the cultural needs not only of allied units and other foreign personnel but also of Dominion and Colonial sojourners of whom the war has brought a vastly increased number to our shores. To take a few instances at random, it organizes educational and recreational facilities for Gibraltarian children on behalf of the Ministry of Health; it runs a Cyprus Association in London, and it has provided a Moslem Centre in Cardiff; it supplies books and periodicals to the Colonial Houses at Newcastle and Edinburgh; and it has sponsored tours and entertainments for West Indian and West African technicians.

The part which the Council is destined to play in education in the Colonies is still in the making. In many Colonies the teaching of English, which is one of its most important functions in foreign countries, will not play such a predominant part. And even where English is not the indigenous language it would be wrong to assume responsibilities which should be shouldered by the colonial government. Nevertheless, there are many educational services, desirable in themselves but beyond the purse of the colonial government and perhaps not coming within the scope of the Development and Welfare Fund, which it may be appropriate for the Council to undertake. A glance at the budget

¹ In the Caribbean area the Council is now represented in Trinidad, Jamaica, British Guiana and Barbados. In West Africa there are representatives at Lagos, Accra and Freetown. The Mediterranean field has been extended to Gibraltar.

of the Education Division already shows such varied entries as "Salaries of 3 masters" for a school in Malta, "Grant towards the maintenance of standard of teaching" to missions schools in Palestine, "Scholarships in the Sudan for students from Aden," and "Epidiascopes" for two schools in Cyprus.

My colleagues in other departments must forgive me if, for want of time, I do little more than mention their names, most of which will give some clue to their activities: Press and Receptions: a curious dual rôle at first sight, but press and hospitality have a common affinity to publicity; and in point of fact a large proportion of our organized visitors are journalists.¹ Books and Periodicals: these in increasing quantities have been going for some years to colonial schools and libraries as a free service; and we are looking into the possibilities of adapting the foreign book export scheme to suit colonial conditions and to encourage the trade in British books.² Films: *British News*, a film compiled by the Council on behalf of the Ministry of Information from the issues of the five British Newsreel Companies, goes weekly to all the Colonies; nearly 1,000 prints of Council documentaries were distributed last year to various territories including 30 Colonies, and over 1,700 prints were sent to education authorities and other institutions for non-theatrical exhibition. Fine Arts, Lectures and Drama, Medicine, Music, Science, Visual Publicity—the activities of many of these departments have been inevitably curtailed or at least their growth has been retarded by war conditions, but all of them surely have as important a future part to play in the Colonial Empire as in foreign countries.

I have sketched briefly the British Council's aims and some of its methods and machinery for their achievement in the interpretation of British life and thought to the Colonies. I have said that the need for this interpretation on a planned basis is, at long

¹ "Receptions" has now been taken over by Home Division under the title of Visitors Department.

² The organization of library services and the training of local librarians have assumed a prominent place in Council activities in the West Indies and West Africa.

last, widely realized. But I have said little or nothing about its ethical justification. Are we merely advertising out-of-date wares on new lines in a last attempt to hold on, for our own ends, to customers who might otherwise be lost to us? Or can we honestly push our wares in colonial shop-windows and say, "These have a long history of good intention and performance behind them. We are striving to keep them up-to-date. We believe that you will still find good value in them?"

Historically, there can be no doubt about the answer. We have made mistakes, and there are ugly flaws here and there which, if we can gain a greater measure of understanding, we need not be so careful to hide or ignore as we have sometimes been in the past. But no honest and informed critic can seriously suggest that the balance of good over evil resulting from British rule in the Colonies has not been in enormous preponderance. And does not the practical answer come in two forms from the Colonies themselves? Are not the desires voiced by the more vocal elements for a greater share in their own governance in themselves evidence of their appreciation of the values which they have learned from us? And is not the war effort of the Colonies as a whole proof of a vastly preponderating loyalty to the British connection?

More important, have we still a mission and a message which we have the duty or the right to impart? Judging by present-day parrot cries and *clichés*, one might sometimes be tempted to doubt it. On one hand is the snarling growl of Colonel Blimp that the Empire is going to the dogs—as indeed it well might if he had the running of it. On another is the flippant sarcasm, whether of gossip writers or of the people who ought to know better, which seeks to raise a cheap laugh at the expense of those who cannot answer back. On yet another—and this must be taken more seriously—is the voice of the pink-tinged doctrinaire who would conveniently ignore realities and in the name of high-sounding principles of liberal democracy would rid us, too early, of our obligations to the backward peoples whom we have

brought to the threshold of civilization; who forgets that though our wards are growing up they are not all of the same age nor growing at the same pace. It has always seemed to me a curious paradox that many of those who are the keenest protagonists of the extension of the school age at home are the first to wish to curtail what is in effect the school age in backward countries. Surely we cannot so speciously evade our responsibilities. And to those communities who have passed the school age is there not still something that we can give, derived from our long experience in (to quote General Smuts) "this great human experiment in political organization?"

Admitting this, some would still say "Yes, carry on your mission to its practical conclusion, but beware of trying to interpret it. A full interpretation of the British way of life as the background of British rule or tutelage must involve a deliberate and inevitable development of discontent among backward peoples." I am not one of those who seem to believe in stirring up discontent almost as an end in itself. But discontent with things as they are is an unavoidable and not-to-be regretted stage in an awakening consciousness; and it is not, surely, the discontent itself that matters but its trend. How can we guide this trend into rational and constructive channels? there are many ways, but I believe two stand out predominantly. Firstly, as we give education—and I mean education in its wider sense, whether academic, technical or more general—do not let us fail as we have so often failed in the past to give concurrently with it opportunity and responsibility in the fullest measure which the pupil is able to bear. That is the job of the governments. And, secondly, as we give this education let us go boldly ahead and give also that very interpretation, which some critics fear, of what lies behind it. Let us animate our connection with an appreciation of its cultural values; let us show by an insight to its background the processes which have gone to its making and the age-long experience which has built us up into what we are. That is the job which the British Council is trying to do.

I had something to do a few years ago with organizing tours in this country for educated Sudanese—tours of a kind which I hope the British Council will in future undertake. After the first tour a member of the party was speaking of his experiences. He was a well-educated man by Sudan standards and a prominent young officer in the Sudan Defence Force, but his horizon, of course, had been limited. And his summing up was this—"I now realize that all the evidence of progress and material prosperity which we have seen have only been made possible by generations of experience and tradition." That, I think, is a practical illustration of the message which may be conveyed by one method of the interpretation of the British way of life at first hand.

I am reminded of an old tag which says, "It isn't ignorance that spoils things; it's knowing things that aren't so"—which latter I take to mean rather imputing things that aren't so or jumping to false conclusions. In the old days that are passing or have passed an honest administration could afford to give its orders and to leave its wards in primitive ignorance of the wherefore and the why. They had neither the knowledge nor the inclination to make reply or to reason why. In varying degree of knowledge and reasoning, and with rapidly increasing inclination and even clamour, they are now asking the "why" of it; and in default of a satisfactory answer is it surprising that they impute things—and motives—that aren't so? The proverbial little knowledge may not only be a dangerous thing for the pupil but may in the long run have disastrous results for the teacher.

As I see it we are now entering, or should be entering, on a third phase in our relationship with the Colonies. The first phase, spread over a long period—perhaps sometimes too prolonged—was one of settlement and pacification, unplanned, uncoordinated and subject to little or no guiding policy. Its achievements were dependent on individual or racial prestige. Having no basis of philosophy it was uninterpretable, nor would interpretation have met with comprehension in the darkness of ignorance. There are black pages to be read, but again no

impartial critic will assert that the end of the chapter does not show a picture infinitely happier than it would have been had Britain not played the part which she did.

The second phase may be summed up in the term of trusteeship. It is a phase of constructive theory in the admission of imperial responsibilities towards the governed peoples, and, in very large measure, of constructive practice. It is a phase which history will undoubtedly mark to our credit, though its immediate assessment has often been unnecessarily blurred through our own failure, whether from apathy or lack of imagination, from smug complacency or self-depreciation, to interpret its philosophy and its achievements either to the world at large or, in particular, to the entrusted peoples.

Lord Hailey recently propounded a doctrine, already sub-consciously felt by many, that trusteeship had its limits, and that, at least in the more advanced Colonies, its limits had been reached; that something more constructive and co-operative was needed than the cold rectitude of the trustee. And so we enter on the phase of partnership. But I venture to think that Lord Hailey would agree, and indeed it can be inferred from his own argument, that a strictly business partnership is not enough. Partners may conduct their business to their mutual profit in full trust and confidence in each other's integrity, and yet they may have very little knowledge of each other's private thoughts and home life. So, too, we may get the Colonies to agree that it is to our mutual material interest to remain in partnership; and that is something, but it is not enough. We want something warmer and more vital, something which will secure closer and more intimate ties than ledgers and legal documents. We want, in fact, human friendship—the friendship which can only be born of mutual understanding and of an intimate insight into each other's way of life; the friendship which does not gloss over faults but esteems its value as something far greater than they can mar; the friendship which, knowing all, pardons all.

You have probably read Alice Duer Miller's lovely verse story of the American woman who came to England by adoption; who so clearly saw our faults and foibles, and yet who by closer understanding grew so to love England that, though she lost to it, in her husband, the causal tie of her adoption, she chose to remain English. Should it be beyond our power, should it not be our high privilege as well as our duty, so to animate and attach our adopted colonial children, that as their trees of liberty grow and spread they may yet remember that the seed is English and at least may say:—

*I am Colonial bred,
I have seen much to hate here—much to forgive,
But in a world where England is finished and dead,
I do not wish to live.*

AN ORIENTAL CULTURAL CENTRE (IN LONDON)

By FRED H. ANDREWS, O.B.E.

*Formerly Principal, Mayo School of Art, Lahore; Curator,
Punjab Central Museum, Lahore; Organizer of the Stein
Collections, Central Asian Antiquities Museum, Delhi; and
Principal, Amar Singh Technical Institute, Srinagar*

MAY I PREFACE THIS PAPER BY SAYING HOW GREATLY I APPRECIATE the presence of Sir Neill Malcolm in the Chair? His active interest in matters related to Oriental culture is well known. I was, therefore, much uplifted when I heard that he had consented to preside.

The subject of my paper is not new. It has been for generations a recurrent theme of enquiries, discussions and deputations. The case for an adequate museum with proper facilities for the study of Oriental ethnography has been repeatedly presented and urged with great eloquence by many eminent authorities who have long since realized the desirability of affording for the culture of India and contiguous lands those conditions for expert research and popular enlightenment which our position in relation to those regions unquestionably requires.

At the present time there is an important committee, under the chairmanship of Lord Zetland, giving practical consideration to the whole matter, and although the exact lines of their deliberations are unknown to me it is probable that many of the points in this paper coincide with those being considered by that committee. Nevertheless, I am here merely expressing my own views, after many years in India and Kashmir and half a century in close association with various aspects of Oriental ethnography as expressed by the arts of the painter, the sculptor, potter, architect and all the smaller domestic crafts.

It is a queer paradox that Britain, having greater interest and wider contact with the East than has any other country, seems perhaps the most indifferent to the desirability, on all grounds, of demonstrating the great achievements of those people, the influence of their culture upon ours and the extent of our indebtedness to them. Yet, for Western people, there has always been a certain attraction towards the mysterious East—vaguely regarded as the lands of spices, of fabulous jewels, vast wealth, gorgeous pageants, glittering temples and strange gods. Romantic poems, stories and plays, sometimes based upon reputed records of historical facts, have been written, freely embellished with picturesque fantasy as compensation for imperfect knowledge. Travellers' tales have been the basis of many of these. There have been the adventurous who have sought the East for purposes of conquest, or trade or the desire for first-hand knowledge of the mysteries. One naturally thinks of Alexander and of those greatest of commercial travellers—the Polo family and especially of Marco of that house, who in his memoirs has given scholars so much material for speculation and learned disquisition. In later times, our own traders, administrators and scholars; or mere globe-trotters who return confident that they know more about India after a few brief weeks of strenuous sight-seeing, than do those who have spent the best years of a lifetime there.

Resulting from these many contacts there have reached this country numberless examples of Oriental craftsmanship in various forms, and objects of artistic, historical, literary and scientific character, some deposited in official keeping and many treasured for a time more or less as souvenirs in private families, often ultimately to be discarded by a younger generation to whom they have no sort of appeal.

There have been, however, for many years, among those who have lived in India, scholarly persons who have prosecuted research along various lines—linguistics, numismatics, history and every aspect of archæology—and through their labours great

strides have been made in recovering most of India's past history. The appearance of early coins, sometimes with shop-keepers in the bazaars or found by despoilers of ancient buildings or by diggers in the fields, has helped notably towards the knowledge of dynasties whose existence in some cases was otherwise unknown. There was lively activity and enthusiasm among scholars over Indian numismatics more than a hundred years ago, and about 1833 the East India Company financed a scheme for the systematic search for coins and their transfer to the Company's museum. The discovery that ancient coins were often found in early Buddhist stupas led to interest in the stupas themselves, their purpose, architectural features and sculptural enrichments, and this interest was extended to shrines, temples and all ancient buildings as well as to the sculptures adorning them. Fragments of sculpture were carried off—sometimes attractive heads only, lopped from their bodies, thereby often losing means for their identification—and found their way to private houses or to museums where they were exhibited usually without indication of their provenance or of their place and significance on the ancient buildings from which they had been taken. And they have mostly continued to be so exhibited to the present time; just disconnected fragments. Many Curators having such fragments in their care deplore this condition of things but are helpless in the absence of data by which it could be remedied. The sometimes well-meaning but deplorable vandalism of those days presented opportunities to enterprising native treasure-seekers who found ready customers for their finds among the amateur collectors. Clever forgers produced quite passable reproductions of rare coins, and at least one ingenious individual caused considerable excitement among palæographers by faking rubbings from spurious rock inscriptions in "unknown characters" and even brought fragments of stone on which strange characters had been chiselled by himself. Thanks to the advice of a few trained archæologists, modern legislation has put an end, as far as possible, to such unauthorised casual collecting of specimens.

As interest in the early history of Eastern culture grew, societies for systematic investigation and study of the many aspects of the subject were founded, of which among the earliest was the Asiatic Society of Bengal (now Royal), founded by Sir William Jones in 1783. It has published a *Journal* since 1832. The Royal Asiatic Society was founded in 1823 with Henry Thomas Colebrooke as first Director and has published a regular *Journal* from 1834. In 1910 the India Society (now the Royal India Society) was founded and records its proceedings in *Indian Art and Letters*, and with the generous financial help of several Indian Princes has published many valuable books on Indian culture. The Royal Society of Arts formed an India Section in 1869, extended later to include Burma, and has continued to provide valuable lectures covering a wide range of subjects connected with India and Burma. These and other societies owe their inception and existence to private enterprise, and the realization by the founders and members of the importance of the Orient in the scheme of world-wide culture nourished and developed by the mutual streams of influence flowing between East and West. In 1783, Colebrooke said "the Hindu is the most ancient nation of which we have valuable remains and has been surpassed by none in refinement and civilization."

I have referred to the objects accumulated at the museum of the East India Company. The vicissitudes attending these collections are probably known to most of those present here; but for the information of those who may not know the story I may be allowed to relate, briefly, the bare facts. The collections were originally exhibited at the house of the Company in Leadenhall Street, but although given house-room they were probably regarded as rather embarrassing, although doubtless welcome, guests, entertained out of regard for their friends the donors, who were mainly connected with the Company in one way or another. This was at about the end of the eighteenth century. When the administration of Indian affairs was taken over by the Crown, the collection was removed to Fife House, Whitehall,

and later, upon the completion of the India Office, to the top floor of the new building. Complaints of inaccessibility led to the removal, in 1874, of all but the Library, to certain galleries at South Kensington as a temporary measure. About this time Lord Salisbury's efforts to induce the Treasury to contribute towards the cost of a special building having failed, the collection was divided between the South Kensington Museum, the British Museum, the Bethnal Green Museum, Kew and the Royal School of Mines. This almost incredible perpetration sufficiently indicates the utter misapprehension at that time of the interrelation of all the activities of a community in the expression of its general culture. But having embarked upon this enterprise of dissipation, the desire for further dispersion was indicated. The already dismembered portion quartered at South Kensington was to be dissected and divided among the general exhibits in the museum in accordance with the system of grouping by material; that is to say, all the objects of one material were to be submerged in an existing collection of things of the same material from all parts of the world, and so could no longer function as links in the chain of cultural development of the land to which they belonged. This scheme, however, raised such strong protest from scholars and others that it was reluctantly withdrawn—but is, I suspect, still nursed and kept alive in certain quarters, for use should vigilance be relaxed.

Among those who strongly protested against dismemberment and dissolution and who took a leading part in actively opposing it, was Lord Curzon. As the spokesman of a deputation to Mr. Runciman (afterwards Lord Runciman), President of the Board of Education, on May 6th, 1909, he spoke very strongly and to the point, not only opposing the breaking up of the collection at South Kensington but urging the desirability of more and better exposition of Oriental culture. He said, "Ought there not to be some place where the traveller and also the stay-at-home can form an idea of the character and mode of life and thought and of the artistic productions of India which will give him, not

only the knowledge he may need at the moment but some idea of the great capabilities of that country?" And further, "Is it not a natural thing that the Indian . . . when he comes to England should expect to find here some evidence of interest in his country and of the importance that is attached by Englishmen to things Indian? It is of the highest importance alike for this country and for India, that our people as a whole, whether specially artistic or not, should have before their eyes a striking evidence of the greatness, the importance and the inexhaustible interest of India." He goes on, "Might we not have a Museum which instead of being a jumble, an anachronism and a reproach, would be a living and growing thing, an organic factor in the scheme of development of our Empire? Such a museum would have great capacities for expansion by legacies, gifts from Indian Potentates and others. Such a scheme would be received with immense satisfaction in every part of India itself."

On the same occasion Sir Richard Temple (the second Baronet), for many years Editor of *The Indian Antiquary*, said, "we ought, in London to show . . . that we have an intellectual interest in it (the Indian Empire) . . . We do not think it right that the Indian student who comes to Europe should find that he cannot get a proper museum to study in at the headquarters of his own Empire, and that if he wants to study the ethnology of his own country he can find a much better museum in Berlin and at the Louvre in Paris. Neither Germany nor France has a direct interest in India, but our own interest is overwhelming." In these remarks by two fine scholars, great travellers and experienced administrators, we get the first public expressions of a wider and fuller vision of, and the need for, a centre for the proper exposition of Oriental culture with suitable conditions for popular enlightenment and scholarly study, and room for the chronological arrangement of exhibits with provision for inevitable expansion as the collections grow in volume and importance. As Professor Boyd Dawkins said at the deputation already referred to, "the large collections scattered about in country

houses which have been collected in old days by makers of India are of enormous extent and value, and would I believe gravitate into such a building."

This was said thirty-five years ago. Since then there has been immense increase in material discovered, largely due to the systematic research carried on by the Archæological Survey of India, research which extends over an ever-widening field, and now includes besides India and Ceylon, Burma, Chinese Turkestan, Gedrosia, all the territory of the Indus basin and contiguous thereto and much more. By the reconstitution of the Archæological Survey through the efforts of Lord Curzon, and its brilliant administration by Sir John Marshall, the appointment of expert coadjutors and the systematic training of Indian students in scientific methods of research instituted under Sir John Marshall's direction, the advances made have been very remarkable. The extent of territory indicated and now subject to the active investigations of the Archæological Survey is, apart from other considerations, sufficient to justify amply the provision of a great museum in this, the centre of the Empire. But the geographical dimensions, extensive though they be, are small in comparison with their artistic, historical and archæological content. And, mindful of the fact that Britain has been in administrative charge for many generations, of more or less of these great tracts with their hundreds of millions of people, their numberless languages and dialects, their varied culture and their past and present influence on the rest of the world, our obligation to recognize worthily all this in the form now again advanced, is surely incontestable and, indeed, imperative to our own self-respect. While other countries publish by snappy articles in small popular periodicals the activities of their nationals in India, conveying by implication that we British are doing worse than nothing, we by culpable complacency allow the fiction to pass as fact. It is unfortunately true, as a distinguished Indian scientist intimated recently, that "there is as little general attention paid to India in this country as to the planet Mars."

One of the effects of the present war has been to bring together in this country thousands of men and women from the Dominions and from the countries of our Allies. It is characteristic of many of these latter candid friends that they believe they have better knowledge about us and our activities than we ourselves have, and one hears the fantastic ideas entertained by the majority about India, of its people and our administration of that land. Our own people being almost equally ignorant, thanks to deficient education, are not only incapable of rebutting calumny but often enough are inclined to accept the distorted views so positively aired. The want of knowledge concerning progress made in education, sanitation, health, industry, irrigation, and in numberless other directions is deplorable, and the ignorance of the complexities of race, language, caste, religion and social customs is not only profound, but by its extent affords scope for speculative assumptions unjust alike to Indians and British. Another effect of the war has been to take thousands of our intelligent and educated men and women to the East, many of whom would have their interest in those lands awakened, and in many cases would desire to supplement and extend that interest by available means on their return home.

In the near future, with the extension of rapid travel, distance will no longer divide East and West. Short visits will be practicable and will be encouraged; and our Oriental Centre might be made an attractive and appropriate focal point for visitors, providing rooms for private consultations, for small committee meetings and such other facilities as the general idea may suggest. It should be a rendezvous for Orientals and Westerners where friendly intercourse in congenial surroundings would promote knowledge and understanding of each other.

I think, or at least I hope, that we have advanced beyond the conception of a museum as just an official curiosity shop or departmental store. In planning the modern museum now proposed, old defects complicating the work of Keepers of the various departments must be avoided. While being attractive it

must at the same time be educative by telling a connected story. By modern methods of construction, extensive floor space can be provided, uninterrupted by massive piers and cross-walls, leaving the disposition of partitions to be arranged to suit each scheme of display; partitions, substantial but capable of being removed or readjusted as occasion should require.

The ordering of the collections should be mainly chronological, with all objects of each period brought into proper relation with one another. In the case of easily portable articles this would be simple, although in respect of sculptures and mural paintings there is a certain complication. These are, unfortunately, mostly very fragmentary and in themselves not usually explanatory. For their proper understanding there should be, when possible, plaster casts of complementary portions and small built-up models to make their significance clear. Accurate models made to scale, not too small, of the types of stupa, temple, mosque, mausoleum, etc., of each period and locality would be most instructive and popularly attractive and would contribute greatly to the enlightenment of people as to the importance of achievement of Oriental builders and other artists.

To provide means for further study for those who have been East, and to dispel some of the obscurity and ignorance to which I have already referred, I propose that it should be an important part of the museum's functions to issue through its Publications Department a comprehensive series of inexpensive pamphlets dealing concisely and authoritatively not only with Oriental archæology, art and crafts, but with progress in all directions as a result of British administration, the efforts of Chiefs of States, and the work of enlightened members of all communities in developing the potentialities and promoting the welfare of their land and its people. There would be, in addition, more elaborate volumes on art and archæology, which should be issued periodically. All the pamphlets and larger works might be written or compiled by the museum in collaboration with the several Oriental Societies, thus combining the services of the most

competent persons. I would further have brief explanatory leaflets available, free on request, in all galleries, to help the casual visitor to understand the exhibits. A good deal of this is, I know, already being done by some of our museums but it could and should be considerably extended in the case of the Oriental museum. There has been brought to my notice recently an admirable little brochure, issued by a certain Institute in a continental State, giving advice to those proceeding to a Dependency of that state, embodying some of the matter I have mentioned, and, in addition, indicating the value of observation, the kind of objects to which observation should be directed and the systematic recording of impressions to render them helpful in the study of art, archæology, history and general culture of the people. The advantages of such a pamphlet to those destined for service in the East is too obvious to need emphasis. Equipped with such advice adjustment to new conditions on actual contact would be facilitated and unconscious indiscretions avoided. It is the kind of work that could be most successfully compiled by the museum in collaboration with our Oriental Societies.

The existence of an Oriental museum in London, worthy of this country and of India and related territories, would attract to itself increased accessions from many quarters. The large and scattered collections in present galleries might with advantage be assembled here, often to the much-needed relief of those galleries. Private collections would find appropriate sanctuary and expert interpretation and by bequest would escape the misfortune and ignominy of careless dispersal. The Archæological Survey of India would be encouraged to contribute from its abundance of past and current acquisitions. Scholars, students and laymen of all countries would be attracted by the comprehensiveness and scientific disposition of exhibits, efficient library and general amenities for study. Lecturers would find ideal conditions for deliveries, a library of lantern slides from which to select illustrations, and a photographic department ready to provide special slides when needed.

It would be premature to discuss details now. This would be for the executive body after sanction of the general scheme. Doubtless the educative value of the cinema would be considered with its potentialities for making known the Indian and Burmese epics, drama, dancing, music, in addition to stories of travel and adventure, village life, architecture, industries and the exhaustless wealth of historical and other matter at present an unopened book to the great majority of people of this country. Periodical exhibitions could be arranged and there would be a permanent picture gallery in which prints and drawings would form an important part in the historical arrangement. Very considerable contributions to this section would undoubtedly come from private collections.

The museum, then, as I conceive it, should not be just an *ajaiib ghar*; it should, as I have indicated, cover a wider field of popular instruction than has, perhaps, hitherto been considered quite compatible with traditional dignity and self-respect. It should be attractive, stimulating and, above all, enlightening, and should include every aspect of Oriental culture. The Governing Body or Directorate, in its constitution should be representative of all the States and territories and such various interests relating thereto as should come within the purview of its charter.

The wider purpose of this paper, as indicated by its title, is to advocate the establishing of an Oriental Cultural Centre, and this could be done by assembling in one locality the several learned societies concerned with Eastern studies, where, in the museum, besides the concrete examples of Oriental Culture, there would be committee rooms, halls and lecture theatre available on the spot. The societies and the School of Oriental and African Studies are in being, and, of course, have their own administrations; I have, therefore, dwelt more particularly upon the importance of the formation of a museum for which so many strong appeals have been made by eminent scholars and statesmen during the last half century. Experience has taught many of us that in this country the period of incubation required to bring

to life a project of acknowledged importance is considerable, and perhaps for a scheme of the importance of this the period is not excessive as things go. But having regard to the rapidly growing recognition of the relationship between the culture of the East and that of the West, and the increasing significance of the East in world development, the practical realization of the museum should be no longer delayed. Our responsible position in relation to the East no less than the desirability of the orderly concentration in one building of the great quantity of valuable material available for the intelligent study of Oriental Culture, demands this.

It may seem that in this imperfect outline I have somewhat exceeded the range of the orthodox limits of museum prescription; but we are scrambling through a period when revision or scrapping of traditional convictions and time-honoured practices is required of us in the sacred name of Progress. Although there may be much to regret in such changes there are sometimes compensatory features. In the present case it is not proposed that anything in the traditional usages which may seem desirable to the internal administration of the museum should be disturbed, but that the educational and social functions should be expanded as widely as possible, compatible with discretion, dignity and well-being.

I visualize the creation, architecturally, as a dignified group of buildings, perhaps in the form of a quadrangle, with the museum, by its need for great floor and wall-space, as the central component with flanking wings to accommodate the Societies, each to have its own entrance and, of course, to retain its complete independence of administration and its prestige, and to have the advantages of the use of the museum lecture halls, theatre and cinema. There is such a grouping, and I believe a successful one, at Burlington House. If the site be where most desirable, in Bloomsbury, the School of Oriental and African Studies would be a near neighbour.

A feature that would add dignity and charm and which would

appeal especially to the æsthetic sense of most of our Oriental friends, is a suitably-designed garden as the setting for the group. But this consideration should not prejudice the selection of the site. There are, however, in Bloomsbury, some once fine squares, now disfigured by the scars of war, claiming on all grounds restoration and rehabilitation. What could be more happy than the placing of our group of buildings at one of these squares, renewing its attractions in rejuvenated and more lively garb and securing the much-desired open space, while giving to the buildings just that additional grace which only a fine garden can give?

And so our Oriental Cultural Centre, in its aims and by its architectural importance, should be an impressive symbol and a practical expression of the bonds that unite East and West and a potent agent for strengthening those ties by promoting friendly intercourse and mutual appreciation—a creation in all respects befitting the greatness of the Empire and worthy of the Empire's Capital City.

CANADA'S NEW NORTH

By CHARLES CAMSELL, C.M.G., B.A., LL.D.

*Deputy Minister of Mines and Resources for Canada and Commissioner
and Member of Council of North-West Territories*

THOSE OF US WHOSE MENTAL PICTURE OF THE WESTERN HEMISPHERE is based on the Mercator projection maps which were in common use a generation ago will remember Canada sitting like a great red keystone on the top of the continent. That, of course, is a distorted picture, but even after the distortion has been corrected it remains a fact that Canada is one of the greatest land masses in the world under one sovereignty, and occupies a geographical position of rapidly-growing importance on the cross-roads of the great inter-continental air routes of the future.

Any discussion of Canada must take into consideration the vast extent of that country. While it is a northern land, reaching into and including the most northern land surfaces adjacent to the North Pole, it also extends southwards far below the British Isles to latitude $41^{\circ} 41'$, which is slightly south of Rome in Europe and slightly south of the northern boundary of California in America. The area of this huge country is 3,694,863 square miles, which is equal to a little more than sixty-three times the area of England and Wales, and is only a little less than that of the whole continent of Europe.

The southern parts of Canada have been under development for many years, and are well known for what they have achieved in the fields of agriculture, mining, forest production, hydro-electric power, and manufactures. It is with the less-known northern areas that this paper is principally concerned.

The Confederation consists of nine provinces, which form a broad belt across almost the centre of the North American

continent, with its northern edge, for the most part, on the 60th parallel. North of that parallel lie the Yukon Territory, 207,076 square miles, and the North-West Territories, 1,309,682 square miles, a total of 1,516,758 square miles. For practical purposes my discussion must also include certain areas in the northern parts of some of the provinces, particularly Alberta and British Columbia. This territory, administered until 1879 by the Hudson's Bay Company, was until that time, and for many years later, valued mainly for its production of fur, although early explorers had also given some glimpse into the physical resources of the land. However, it may be said that except for the discovery and development of mineral resources—gold in the Yukon in 1897, oil at Norman in 1921, and gold at Yellowknife and radium at Great Bear Lake within the last decade—the north-west has lain dormant, contributing to the economy of Canada mainly through the fur trade.

In the very north-western corner of the continent lies Alaska, a possession of the United States, with its area of 586,400 square miles, including the "pan-handle" which stretches part of the way along the north-western side of British Columbia. The fact that this area belongs to the United States has had a significance in the recent war which could not well be foreseen, and promises to be an important factor in north-western development after the conclusion of peace. Now the north-west has burst into new life, and Canadians are beginning to realize that here is a part of their national heritage which may have vast potentialities, and which may offer to those of British stock possessed of the pioneer spirit an outlet for their energies now that the war is over.

The outbreak of war with Japan gave a new interest and importance to the areas bordering on the North Pacific. This interest, however, relates not only to the coastal and adjoining areas, but is reflected in the great interior. This part of the North American continent, long so little known or understood, has acquired in the public mind a strategic importance which was not appreciated before Pearl Harbour. Similarly, the far eastern



NORTHWESTERN CANADA

Scale: 1 inch to 200 miles

parts of the area have undergone a military development which seems sure to have its commercial effects after the war. The whole region has therefore assumed in the minds of forward-looking people an economic importance due to better understanding of its potentialities and to the new lines of communication which have been developed into it and through it.

Alaska and Yukon Territory before the war were practically inaccessible except by water along the Pacific coast, and hence were very difficult to reach and, in case of necessity, to defend. While there was some agitation among west coast people before the war for an overland connection between Alaska and the rest of the continent, no definite steps, except preliminary surveys, were taken either by Canada or the United States toward the building of a highway. Public interest in such a project was restricted almost entirely to Alaska and the Yukon, the north-western states, and British Columbia. As for the inside of this northern region, travel was confined, in Canadian territory at least, to the waterways, chief of which were the Mackenzie and Yukon Rivers, as it had been for a century and more.

As airplane travel became more practicable and popular, however, routes were developed from Edmonton northward into the Mackenzie Basin and were used largely by prospecting and mining companies. Only two or three years before the war a passenger service was opened north-west from Edmonton, in Alberta, to Whitehorse and Dawson, in Yukon Territory, cutting diagonally across the region now being opened up. After the outbreak of war the Government of Canada further developed and improved this particular route to the Yukon by the building of a line of airports at Fort St. John, Fort Nelson, Watson Lake and Whitehorse, and so the present airway, known as the North-West Staging Route, came into being. This was the first route in the whole of our north country over which land planes could be used. It was strictly a Canadian undertaking, and as indicated by the Hon. C. D. Howe, Minister of Munitions and Supply, will be controlled by Canada. I make that observa-

tion in passing, as the close interlocking of United States and Canadian interests in the defence of North America have called for equally close association in their military effort, in which the strict limitations of national sovereignty have not been insisted upon. This co-operation, however, is based upon and made possible by assurance of complete return to the original status.

It was in December, 1941, that the treacherous attack on Pearl Harbour suddenly flung the searchlight upon North-Western America. This attack was followed by the occupation of Kiska and Attu by Japan, and both Canada and the United States suddenly awoke to the threat to their sovereignty in the North Pacific region by our Japanese enemies. It was obvious at once that the airways would have to be secured and airports serviced by an adequate ground transportation route. An agreement was consequently made between Canada and the United States for the building by the United States Corps of Engineers of a military road extending from the end of the railway at Dawson Creek, B.C., to Fairbanks, Alaska, now known as the Alaska Military Highway. Construction was commenced in March, 1942, and eight months later the road was officially opened for traffic. This highway cuts through 1,500 miles of the Canadian wilderness, and its building was one of the engineering achievements of the war. At the same time other undertakings such as the Canol Project, which includes oil developments in the Lower Mackenzie, a pipeline west to Whitehorse, landing-fields between Edmonton and Norman Wells, and a number of winter roads were started. These projects have now practically reached completion.

Developments in the north, including the provision of all these transportation facilities and the resources that become available through them, have thrown a searchlight of public interest on the region, so that people have begun to ask, "What is this country like, and what about the use of these transportation facilities in its economic development after the war?"

Another question among air-minded people arises from a

study of the map of the Northern Hemisphere. It reveals that the shortest airway from the centre of the North American Continent to Japan, China, Siberia and other parts of Asia is directly through this region. What influence will the development of such an airway have upon the territory it traverses?

These questions demand an answer. That answer was being sought under the auspices of Joint Economic Committees organized by Canada and the United States, which decided to sponsor a project involving a systematic study by the two countries of all the problems involved. This undertaking has been carried out by groups in Canada and the United States collaborating with each other.

The Canadian group included members of interested Federal Departments of Government working in co-operation with the Governments of Alberta and British Columbia.

The territory which came under this study has an area of approximately 1,360,000 square miles, more than half of which lies in Canada. It is about the size of Europe excluding European Russia. It is inhabited by less than 100,000 people, of whom the greater number is in Alaska. Boundaries of the area are not clearly defined except on the north and west, where lie the Arctic and Pacific oceans. The southern boundary of the area is about latitude 53° N. The eastern boundary follows the broad valleys of the Athabasca, Slave and Mackenzie Rivers. Within these boundaries lies some of Canada's finest virgin territory, more varied in its resources than most of the unsettled country to the east of it, and, because most of it comes within the influence of warm winds from the Pacific, less rigorous in its climate.

A few words as to the climate may be in order at this point. Naturally, in so large an area there are great variations of climate and I can deal with the subject only in general terms. Low winter temperatures are carried well up the Mackenzie Valley and the intervening country on the west side of Hudson Bay to the Churchill and Nelson Rivers. Very low temperatures sometimes occur in these areas, but the mean temperature is about 30 degrees

warmer than that portion of Siberia with the same relative situation. Long periods of steady cold are of very rare occurrence in this north-western region. After the passage of a cold wave the wind shifts into a westerly or southerly quarter and the region is rapidly invaded by air of Pacific or south-western origin with rising temperatures. In the Peace River country and Northern British Columbia the winter is milder under the influence of the circulation from the Pacific and through the mountain valleys from the south. In spite of their higher latitude these areas are warmer than some mid-continent regions considerably south of them. This is especially true of the Northern British Columbia Coast where cloud and rain, rather than low temperatures, are the characteristics of winter. In early May the temperature begins to rise quickly in the southerly parts of this region, but at the Arctic Circle the rapid climb begins somewhat later. By the beginning of July the country along the Mackenzie Valley and the basin drained by its tributaries reaches a mean temperature of about 60 degrees. Temperatures exceeding 90 or even 95 degrees sometimes occur in the short summer of the north-west. The long period of sunlight, with scarcely any darkness, contributes to the extremely rapid growth of native grasses and plants. The experimental farms at Fort Vermilion and at Beaverlodge grow wheat successfully. The entire area except for the Northern Pacific Coast is one of low precipitation, with an average of from five to ten inches of rain annually. The snowfall is equivalent to an additional five to seven inches of water. Of course, this is a country of low evaporation, so that these precipitations are more ample than they would be at southern latitudes. On the whole the climate, although rigorous, is quite liveable, and throughout the area has not been a serious barrier to permanent settlement.

The Canadian part of the North Pacific region, which is all I propose to deal with in any detail, includes Yukon Territory, Mackenzie District of the North-West Territories, northern British Columbia, and northern Alberta. The major physical

features of the region trend north-west and south-east. On the east of the area, and outside of it, is an extension of the pre-Cambrian shield, a rocky country of numberless lakes, rolling hills and, as you go north, little or no covering of soil or forests. Bordering this on the west is the northward extension of the Great Plains region occupied by the northward-flowing Mackenzie River and its tributaries, the Athabasca, Slave, Peace, Liard, Peel, and many others, and bearing on its surface such great lakes as Athabasca, Great Slave and Great Bear. This region is fairly uniform in contour. Its surface is broken only by isolated hills or ranges of low mountains, and is covered by forest to the shores of the Arctic. A great deal of the country back from the rivers is the typical northern muskeg. While its principal economic value is and has been as a fur-bearing region, it offers in certain areas, notably the Peace River region, considerable opportunity for agricultural development. Its greatest potentialities in mineral resources are in oil. The Norman oilfield lies in this area.

West of this, and covering the greater part of the area, is the Cordilleran region. This great physiographic unit is essentially mountainous with high plateaus separating the mountain units. It is more diversified than the other two in its physical characteristics, less uniform in the climatic conditions of temperature and precipitation, and more varied in its natural resources of forests, soils, minerals and wild life. Much of it extends above the timber line; some areas in the coast ranges are snow-covered throughout the year. A strip along the Arctic coast is tundra. Its rivers, Yukon in particular, follow the main north-west and south-east trends. Some of them, however, such as the Peace, Liard, Skeena and Stikine, cut across these trends and provide line of access into the interior both from the east and from the west. Through this great region, before the coming of the airplane or the building of the highway, the principal lines of travel were along its rivers, mainly the Mackenzie and the Yukon, first of all by canoe and York boat, and during the last fifty years by steamboat.

To-day the airplane is the dominant method of transport for passengers.

Against this brief outline of the physical background, let me sketch, as far as is known, some of the resources of the region, and the possibilities of development that are latent therein. The first objective we have had in our study of this region is to determine what population we may expect it to support. The answer to that question is contained in another question, viz.: What industries are likely to be developed in it? This will depend upon its basic resources, on its lands, its minerals, its forests, and its wild life, its power potentialities and its transportation possibilities. These are the subjects to which we are giving our first attention and our first problem, therefore, is to determine what are the basic resources of the region.

Much has already been done in appraisal of these resources over the last fifty or sixty years, but very much more is still to be done, as a great deal of the country is still a *terra incognita*. During the '43 and '44 seasons we made our biggest effort so far, and this effort was largely concentrated along the line of the highway and the pipeline, though much was done on oil investigations on the Athabasca and Mackenzie Rivers. Geological parties covered the highway from Dawson Creek to Whitehorse, and in 1944 extended their activities northward and eastward; soil and grazing specialists from the Department of Agriculture traversed the whole highway from Dawson Creek to Kluane Lake and on to Dawson with a view to appraising its agricultural possibilities. During '45 similar parties were in the Mackenzie Valley. We also had biological parties, botanical parties, forestry parties, and one party making a report on its scenic attractions. Fish experts covered Great Slave Lake and Mackenzie River. We also had water-power engineers and others studying transportation problems. The results of all these investigations are now being analysed.

Of the basic resources let us take first of all its minerals because, after all, mining has so often proved in other parts of Canada to

be the spearhead of economic development, and no doubt it will prove to be so here. The most notable developments in mining so far in the north country have been in lode gold at Yellowknife, pitchblende at Great Bear Lake, oil at Norman, placer gold in Cariboo, Omineca, Atlin and Klondyke, mercury, copper, silver, tungsten and coal in the mountains. These, however, do not exhaust the possibilities of mineral development by any means. A variety of rare minerals was discovered in the pre-Cambrian area last summer, and throughout the mountains generally there are great areas where prospecting for metallic minerals may be carried on with promise of success.

In my opinion, however, the greatest promise of mineral development lies in metallics in the pre-Cambrian, and in oil along the eastern edge of the mountains and on the lower Mackenzie. The bituminous sands of the Athabasca field are well known, and are now being given a thorough test at Mac-Murray. The petroleum resources offer the greatest opportunities for early development and for increase of population. One of our expert investigators reports on this subject: "Here, then, we have the essentials for potential oilfields covering an area of over one thousand miles in length. This is probably the largest comparatively unexplored potential petroleum region in North America, and surface evidence of oil in the form of seepages occurs in several places." It was these oil resources which led the United States, with the consent of the Canadian Government, to build the Canol Pipeline from Norman Wells to Whitehorse, a distance of 577 miles, so that gasoline might be available for motor use on the Alaska Highway and for airplane use in the protection of Alaska and the Pacific Coast.

The agricultural possibilities of the area are substantial, but he would be a rash speaker who would attempt to define them in precise terms. More than soil and climate enter into agriculture; conditions change, and conclusions based upon the facts of the 1940's may be inaccurate in the 1960's, or before. What I mean is this: There was a time when the agricultural possibilities of

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Canada's prairie region, stretching from the Red River to the Rocky Mountains, were seriously questioned. Early frosts in many areas, drought in others, seemed immovable obstacles to permanent and prosperous agriculture. But new varieties of grain, developed mainly through the scientific efforts of Canada's Department of Agriculture, together with changing climatic conditions due to settlement, overcame the menace of frost, and new methods of agriculture have mitigated the damage from drought except in most severe seasons and in the areas of lightest rainfall. To-day that prairie country, once regarded as a doubtful agricultural asset, is recognized as the "bread-basket of the Empire," and one of the greatest food-producing areas in the world. While one must be guarded in one's predictions about any new country, the future is just as likely to confound one for pessimism as for optimism. Some things, however, we know. Extensive research has already been made by Canada's Department of Agriculture, and perhaps I cannot do better than quote some conclusions arrived at by Dr. E. S. Archibald, Director of the Experimental Farm Service of Canada:

"Present information indicates that there may be about 15,000,000 acres of arable virgin land in the area defined in this paper as North-Western Canada. One-third of this area is serviced by existing railroads, while the remainder is largely inaccessible at the present time. These figures may be considered as conservative by some, as they do not include large areas of the poorer types of grey wooded soils.

"In time most of the better lands in North-Western Canada will be farmed. Their development, however, will be slow as compared with the opening up of the prairies in the early years of this century. The wooded nature of these lands and their distance from railways will prevent any rapid development. This is not to be deplored, as it will permit an orderly settlement based on soil survey and other pertinent information to take place.

"Immediate future development should be confined to

Canada's prairie region, stretching from the Red River to the Rocky Mountains, were seriously questioned. Early frosts in many areas, drought in others, seemed immovable obstacles to permanent and prosperous agriculture. But new varieties of grain, developed mainly through the scientific efforts of Canada's Department of Agriculture, together with changing climatic conditions due to settlement, overcame the menace of frost, and new methods of agriculture have mitigated the damage from drought except in most severe seasons and in the areas of lightest rainfall. To-day that prairie country, once regarded as a doubtful agricultural asset, is recognized as the "bread-basket of the Empire," and one of the greatest food-producing areas in the world. While one must be guarded in one's predictions about any new country, the future is just as likely to confound one for pessimism as for optimism. Some things, however, we know. Extensive research has already been made by Canada's Department of Agriculture, and perhaps I cannot do better than quote some conclusions arrived at by Dr. E. S. Archibald, Director of the Experimental Farm Service of Canada:

"Present information indicates that there may be about 15,000,000 acres of arable virgin land in the area defined in this paper as North-Western Canada. One-third of this area is serviced by existing railroads, while the remainder is largely inaccessible at the present time. These figures may be considered as conservative by some, as they do not include large areas of the poorer types of grey wooded soils.

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those areas at present serviced by railways and to locations where a certain amount of agriculture would assist materially in the development of other natural resources. After the good vacant lands in the Upper Peace and the railway belt of central British Columbia are settled it will be time to consider the opening up of the large Fort Vermilion-Fort Nelson plain and the Parsnip-Findlay Valley for settlement. These areas are remote from established transportation routes at the present time, but they are not as remote as the Upper Peace was some thirty years ago.

"Some soil surveys have been conducted in the region, and it is hoped that after the war the present joint Dominion-Provincial soil surveys in Alberta and British Columbia can be expanded to a sufficient extent to be able to undertake vigorous programmes in the northern areas of those provinces."

In agriculture, therefore, the greatest expansion in the foreseeable future will undoubtedly take place in the Peace River Basin, although smaller areas of suitable agricultural land have been noted by investigators at Fort Nelson, in North Central British Columbia and near Champagne, west of Whitehorse. Elsewhere small-scale farming operations have been carried on at many points along the main valleys even to the edge of the Arctic Circle; enough, at least, to serve many of the local needs. As population increases, dependent upon other industries, no doubt this type of agriculture will be proportionately expanded.

The forest resources of the Canadian North and West are scattered over an immense area, and vary greatly according to latitude, altitude and climatic conditions. There is a heavy forest cover in the coast area, estimated to be capable of producing 240,000,000 board feet annually. This area was drawn upon heavily for war purposes. It is estimated that the forests of the interior of northern British Columbia have an annual growth of 1,250,000,000 board feet, but only about one-fifth of this is at present accessible. There are also substantial

forest resources along the Alaska Highway, including some scattered stands in the Yukon Territory. Patches of merchantable spruce appear to occur generally along all the larger rivers in Mackenzie District, but they rarely occur with sufficient frequency to constitute any large reserve. There is, however, much small timber very valuable to campers and prospectors, and as a habitat for game and fur-bearing animals.

This brings me to a mention of the fur trade, which is the north's oldest industry and has been carried on for 150 years. It is the policy of the Government to protect the game as much as possible for the subsistence of the native population, and extensive game preserves have been established for that purpose. There is no doubt that the game resources of the country, which include game fish, can be maintained against any reasonable drains, and can also be developed as an important attraction to sportsmen.

The country is well supplied with resources of coal, oil and running water for the production of power. As industrialization progresses, no doubt these resources will be developed.

Undoubtedly there will be many who will want to go into this area now that the war is over, whether to engage in farming, prospecting, or the development of some of the other resources which I have outlined. You may therefore expect me to make some predictions as to the population which can be carried by the Canadian section of the great north-west period. Here one enters the realm of speculation, though an appraisal of the natural resources of the region gives some basis for an opinion on its population possibilities. The pre-Cambrian country east of the Mackenzie Valley never can be expected to maintain a large permanent population unless there are large mineral developments in that area. Exhaustion of mineral resources elsewhere, or increased demands for minerals, should lead to widespread explorations and discoveries in the north, but it is impossible at this time to predict the extent of developments arising out of such discoveries. One can, however, visualize centres of population throughout this region based upon mineral

development. The section west of the Mackenzie River, including the immediate river area itself, offers somewhat greater assurances of sustained population. The soil is better, the climate is more moderate, there is a heavier forest cover, but most important of all, here lie the greatest possibilities of oil development that we have in Canada. In the southern portion of this area are also the greatest opportunities of agricultural expansion.

Of a different type are the industries that may support a population on the Pacific watershed. Here we have a climate more mild than that in eastern parts of the continent many degrees farther south, supported by an ample rainfall. Growth is relatively heavy and rapid, and such agricultural areas as exist are capable of supporting a somewhat concentrated population. Here, too, are definite industrial possibilities—lumbering and the manufacture of paper, for example, and the processing of the valuable fish crops of the sea. Here also are great possibilities for metallic minerals and power developments. It is reasonable to hope that in process of time this area will support a density of population comparable to that now found in Norway.

On the whole, I think it would be optimistic to look for a great rush of settlement into Canada's Far North, as seems to be anticipated in some quarters. Comparisons with an area like Siberia, for example, are likely to be misleading. Although Russia cannot be described as an over-populated country, the density of population there is about six times what it is in Canada, and other conditions, such as the opening of the Arctic sea route from east to west, which do not exist here, have tended to press the fringe of settlement farther north. Certainly Canada's North will support a larger population than at present and, in many localities, a very much larger population, but I think it safe to say that the density of permanent population north of the fifty-fifth parallel is not likely to be as great as that farther south. My opinion on this matter is influenced by our experience with other roads pushing out through our virgin territory. Those most successful, such as the Temiskaming and Northern Ontario

Railway, had the benefit of traversing mineral-bearing territory, and traffic associated with the mines was the principal source of revenue. Farming developed later, wherever there was suitable land. Those roads or parts of roads which did not tap the mining areas were not so successful or were much slower in developing population.

The conclusion that I arrive at, therefore, is that in the opening up of this new North-West the mineral resources are of prime importance, and will constitute the spearhead of development. Agriculture and other primary industries will follow wherever conditions are favourable.

I have been speaking of permanent population, but there is another aspect, in which the picture may differ. That is with respect to *temporary* population; I mean the population which moves in for a few days or a few weeks to see the scenery and enjoy the freedoms and contacts of the North. Few countries have such attractions to offer, and few have such unmeasured possibilities of development along that line. The Alaska Military Highway, and other trunk channels which may be driven through the wilderness, will, in time, become arteries for motorized travel, and the great water routes of the Mackenzie River provide other means of entry, so that tourists and those of adventurous mind may respond to the insistent lure of the North. The air routes also will bring many people in response to this lure. For there is such a lure. Explain it how you will, men—and also women—who have once tasted the life of the north never seem to be fully satisfied elsewhere. There is something inherent in the human heart and the human soul which responds to the appeal of the Wilderness, and which no other appeal can satisfy. Here, then, lies the greatest unspoiled recreation land on the continent to-day. With the return of peace, tourist travel, either along the highway or by air, or along its great rivers, will draw many people to Canada, and the Great North-West will have its share. This stream, however, as I see it, will not quickly reach full flood because the highway that will

be handed over to the Canadian Government will be a military road, and not a tourist highway, and the other routes need developing for tourism. Much improvement in the road will be necessary before it becomes a highway such as tourists have been accustomed to on this continent and a little time must elapse before provision can be made for fuel supplies and accommodation.

Those of you who have been patient enough to bear with me thus far must be aware that I am dealing with an immense territory concerning which in many respects information at present available is by no means final. We are seeking, and obtaining, more information every year; I might almost say, every month. Field investigations, conducted mainly by the Department of Mines and Resources—which include forestry and wild life—are designed to uncover and establish a factual picture of the whole country. Extensive mapping work, involving aerial photography, is being carried on. Many Canadian Government experts are in the field at this moment, assembling the information which will take the guesswork and much of the hazard out of the future development of this country. Just as the map of Canada has for a century been unrolled westward, so now it is northward that “the ride of Empire takes its way.” The same racial stock which has carried the flag around the world will also carry it to the farthest north, and we may be sure that they and their sons and daughters will write a record of achievement not unworthy of the race from which they sprang.

SCIENTIFIC ASPECTS OF AUSTRALIA'S INDUSTRIAL DEVELOPMENT

By GUY B. GRESFORD

Australian Scientific Research Liaison Officer

IT SHOULD BE UNNECESSARY TO-DAY TO REMIND AN AUDIENCE how the very existence of any modern nation in peace or war—and from a technical point of view the problems involved are not so fundamentally different—depends on the activities of organized science. Five years of war have accustomed that most important of men—the man in the street—to his indebtedness at every turn in his modern life to science—for his food, clothes, shelter, protection from disease, transport, recreation, and so on, as well as for the means of defending himself against the enemy or for carrying offence into the enemy's territory. Over the past fifty years the organization of scientific research has been one of the most noticeable features in the growth of our modern civilization. The development of new industries and the re-establishment and improvement of existing ones in the period following the war will demand the application of scientific research on a scale hitherto undreamed of. I have been asked to say something to-day about this relationship of science and industry in the Dominion of Australia. In the short time available it will be impossible to give even a comprehensive summary of Australian industrial development. I shall attempt therefore to discuss, rather by way of example, a few cases where the influence of science has had a particularly marked effect on the development of an industry, and by drawing inferences from these successes say a little, if you do not think it rash, about the future. I hope also to sketch briefly for you the scientific organization in respect to industry which exists in Australia. It is

intended here to interpret the word "industry" in its widest sense so as to include those activities connected with agriculture and the land on which Australia is still primarily dependent, as well as the manufacturing or secondary industries in which such tremendous development has taken place during the war.

It may be useful before dealing with the specific aspects of my subject to remind you of a few facts about Australia which are relevant to a discussion about its industries and which should be borne in mind in considering their general pattern. Australia can claim the distinction of being the largest island or the smallest continent on the globe, with a total area, including the island of Tasmania, of nearly three million square miles. It lies between the tropical latitude of 11° S and the much more temperate one of 44° S. From a physical standpoint, the continent is divisible into an eastern and a western section. In the former section a mountain chain extends down the eastern coast and along part of the south. All along this coast and stretching inland from the mountains, is a fertile area devoted to agriculture, dairying and sheep-raising. In the west, a large part of the interior of the continent is mainly sandy or stony desert. The mountain chain in the east is the source of numerous rivers, flowing mainly east or south. In the interior of the continent are numerous lakes, most of which are salt. There are, however, numerous supplies of artesian water. The mineral resources of the continent are considerable. The population of Australia is now well over seven millions, of whom 86 per cent. are Australian born and 97 per cent. of British stock. Forty-seven per cent. of these people live in the six capital cities, of which two—Sydney and Melbourne—have each a population exceeding a million.

Because of this concentration of population in the towns, as well as for the reasons of history, it is convenient to consider Australian primary and secondary industries separately. It is in the first category of these—as a producer of wool—that Australia is probably best known overseas. The pastoral industry is still by

far the greatest in the country. The market value of all Australian pastoral products during 1939-40 was approximately £81 million, of which £62 million was from wool. Australian flocks, which in 1941 numbered 125 million sheep, produce more than one-quarter of the world's whole requirements of wool, and maintain an industry with a capital value estimated at £750 million. It would be inappropriate here to describe in detail the history and development of the wool industry as a whole since it is particularly to scientific work which has helped this development that I have to refer. To maintain its pre-eminent place as a wool-producing country has required the solution of many problems arising from such factors as climate and soil, which are peculiar to Australia. The Council for Scientific and Industrial Research, which is the main Government agency for scientific work and to which I shall refer later, maintains a number of laboratories and experimental farms throughout Australia for work on problems connected with the wool industry. It is investigating the feeding of sheep to give increased wool production and it has achieved remarkable results in dealing with such problems as black disease, enterotoxaemia, pulpy kidney, caseous lymphadenitis of sheep, internal parasites, coast disease of sheep and braxy disease, the sheep blowfly, and so on. Quite recently, stimulated no doubt by the competition from artificial fibres, the Australian wool industry itself has made plans for a tremendous expansion of scientific research. Preliminary details of these plans have been published in the Press. By increasing the levy on growers on wool produced, the Australian Wool Board proposes to raise a large sum, to which the Government will contribute. Part of the money so raised will be spent by the Council for Scientific and Industrial Research on biological and textile research, while part will go towards economic research and publicity. Although there are many pessimists who consider that the future of wool is doomed by the development of synthetic fibres, the opinion is held in many quarters that vigorous fundamental research will result in the improvement

of wool quality and yield, the cheapening of processing from the shorn stage to the fabric and the development of new and novel textiles, so that wool should more than hold its own. Only time can tell whether this prediction is accurate or not, but the faith being shown in what can be achieved by scientific work is an indication of the success that has already been achieved in the past. This link between science and the wool industry will become closer in the future.

Whereas the raising of sheep is carried out over a large part of Australia's non-desert area, the dairying industry is confined practically to the better-watered, more temperate, area of the continent. Australia's dairy herds in 1943 totalled over four million, and the industry proved a key one during the war, not only in Australia itself and in helping to supply fats and protein for this country, but also in helping to feed the vast Allied forces operating in the Pacific area. In recent years much scientific work has been carried out for the industry. In particular, more attention has been given to the feeding of stock and the development of scientific methods of herd testing; and a steady expansion of production has been brought about by the wider recognition of the wisdom of using pure bred stock and of top dressing and otherwise improving pastures. In this field again, the Council for Scientific and Industrial Research has devoted much of its energy both on the animal and biological side, and, since the war, on the dairy and production side.

It is impossible in the time available to go into other aspects of Australian agricultural production or to show the various successes that have attended the application of scientific research in many different directions. Much work has been done in respect of the most important grain crop—wheat. In the early days the imported varieties of grain were seldom satisfactory. Australia's farmers set to work to breed their own varieties, but it was not until the end of the last century that the Englishman, Farrer, who had been experimenting with wheats privately and had had considerable success, gave his attention to the develop-

ment of new varieties of seed wheats. As a result, wheats were produced which came to harvest at the right time and thereafter gave greater yields than those previously planted. Wheats were bred which would grow in areas where the rainfall had previously been considered inadequate and wheats with superior milling qualities were produced. It was also realized about this time that the soils of many of these areas were deficient in phosphates so that the use of artificial manures began with the consequent development of their manufacture in Australia on a large scale—a highly scientific industry. This in turn gave rise to developments in the manufacture of sulphuric acid. Since that time various research institutions have successfully developed the breeding of new varieties of seed wheats and investigated new methods of farming, particularly in the light rainfall areas. The wheat production in Australia averages about 162 million bushels annually, a large proportion of which is exported. The industry is becoming of even greater potential significance now that definite schemes are being evolved for the improved nutrition of peoples in the East.

Scientific work has also been useful in the development of other grain crops such as oats and barley. Another major agricultural crop is sugar—confined to Queensland and the north coast of New South Wales. Australia is the only country in the world which grows sugar cane entirely by white labour. In southern Australia, the sugar beet industry is also successfully established. Cotton is another product whose successful cultivation in Australia has been developed by scientific research. A great deal of investigatory work has also been done by the Council for Scientific and Industrial Research on tobacco—an industry which is still being developed. The breeding of disease-resisting varieties of plants and methods of controlling the diseases attacking them have received close attention. Another field in which the Council for Scientific and Industrial Research has been working has been in the industry connected with the production of dried fruits. This is mainly confined to the irriga-

tion areas where many local problems have had to be overcome. Much work has also been carried out on citrus fruits.

Next in importance to the Australian pastoral industry is that of mining, which, since it involves the winning of products directly from Nature, may still be considered as a primary industry. The utilization of its products in metallurgical operations for the production of metals and alloys or in the chemical industry for the manufacture of chemicals and intermediates comes rather under the heading of "secondary" industry. It seems appropriate therefore to consider the whole question of the winning and utilization of minerals in between the pastoral and agricultural industries and the purely manufacturing industries. In the year ending June, 1940, the value of mineral production from all sources in the Commonwealth was about £40 million. About £17½ million is represented by gold, a material for which the scientist has found little use and about which even the economist is doubtful. The remainder of the sum is made up mainly by coal, lead, silver, iron, zinc and copper—all substances of established industrial significance. Little need be said here about coal since its mining and use in Australia are orthodox. The main fields are on the east coast, and the coal is largely employed for power raising or metallurgically in the iron and steel industry. In Victoria there are extensive deposits of brown coal, which are mined by open-cut methods, and used largely for electric power raising and for briquetting for domestic use. The development of these deposits which has been carried out in a highly scientific manner has been the task of the State Government of Victoria.

Broken Hill in the west of New South Wales is the main producer of lead-silver-zinc ores, the deposits there being probably the most extensive high-grade ones in the world. Other mines are at Mount Isa, Queensland, and on the west coast of Tasmania. The Broken Hill field has been a centre of such intense metallurgical experiment for so many years that it is worth dealing briefly with some of the processes which have

been developed there. There have been some scientific advances of the highest order which have had their repercussions all over the world.

Sturt, the famous explorer, was the first to set foot on the Broken Hill during his overland trip in 1844 to explore Central Australia. Round about 1867 the disastrous gold rushes occurred, but it was not until the 'eighties that prospecting revealed the lead-silver-zinc ores. Since that time there have been three stages in the development of the field. The first, which ended at the close of the last century, was when operations were confined to the mining of rich carbonate ores and their smelting at Broken Hill or at centres in South Australia convenient to the sea board. The next stage, which continued up to the last war, was when most of the companies working the field were producing lead and zinc concentrates and selling these products for final treatment overseas. The present stage of development began about 1915. Prior to that, although these lead-silver-zinc deposits were the richest in the world, Australia had only had plant capable of producing about 70,000 tons of lead and 2,500 tons of zinc per annum. In 1915 development was started whereby at the present time practically the whole of the lead concentrate produced is reduced to metal. About 60 per cent. of the zinc concentrate is reduced in Australia likewise. Lead smelting is carried out at Port Pirie in South Australia, while zinc is produced electrolytically at Risdon in Tasmania. (An excellent review of the whole industry has been given fairly recently by Woodward, in an address to the Australasian Institute of Mining and Metallurgy.)¹

The experimental work by metallurgists and chemists which has developed these processes to their present pitch of efficiency has extended over many years and is still going on. Two particular problems may be mentioned here as examples. The higher grade ores already referred to were exhausted towards the end of the last century and the problem of treating the sulphide ores

¹ Woodward: "Review of the Broken Hill Lead-Silver-Zinc Industry"—Proceedings of the Australasian Institute of Mining and Metallurgy, New Series, No. 119, Part I, September, 1940.

which had been developed from the mining point of view in the meantime became of considerable importance. Numerous processes were employed for the separation of the zinc from the lead sulphides so as to enable blast furnace smelting of the latter. In the early stages the zinc concentrate was dumped and it was not until the formation of the Electrolytic Zinc Company of Australia during the last war that treatment was undertaken which resulted in the final production of electrolytic zinc. The processes tried out included wet concentration and magnetic separation. Some early experiments were carried out on the flotation process in 1907, but results were not satisfactory and magnetic separation was proceeded with. The history of flotation makes a fascinating story. (An excellent review was given by Wark at the beginning of the war.¹) Various flotation processes which were developed solved the problem of recovering zinc-lead in a concentrate from the large heaps of tailings in the field. These processes made a collective float concentrate containing lead and zinc minerals, but the real problem was the separation of the lead from the zinc and experimental work by mining companies was directed towards this object. Numerous patents were taken out by different companies and various processes employed. At the beginning of the war the main process used was the Minerals Separation Company's process which was developed from the American patent of Keller and Lewis in 1923. This patent was taken out for the use of alkyl sulphur derivatives of carbonic acid known as xanthates. It was found that potassium ethyl xanthate has pronounced collecting properties for the sulphide minerals, and the present high lead and silver recoveries in the flotation sections of the mines to-day are due to this reagent. With new problems always arising, continuous experimental work has still to be undertaken. It is interesting to note that for the ten years prior to the war a group of Australian mining companies financed a small team working at the Uni-

¹ Wark: "Principles of Flotation"—Australasian Institute of Mining and Metallurgy, 1939.

versity of Melbourne on the fundamental physical chemistry of the flotation process. This work had to be stopped at the beginning of the war, but is partly carried on now by the Council for Scientific and Industrial Research. The requirement for other metals during the war has stimulated work in several new fields with the result that the extension of the flotation process to the concentration of new minerals seems a definite possibility.

The second example of the application of scientific work to problems connected with the Broken Hill ores is concerned with lead refining. A continuous lead refining process for dressed smelter bullion which has been evolved by the staff of the Broken Hill Associated Smelters is a particularly pretty example of the application of physical chemistry to an industrial process. The scale on which the process is carried out, and the fact that it is at high temperatures add to the achievement. The Port Pirie refinery is the only one of its type in operation in the world. There is a continuous flow of bullion through the refinery, the normal rate varying from 20 to 34 tons per hour. In the course of its flow the bullion is successively refined for arsenic and antimony, silver and gold, and zinc. The arsenic and antimony are removed by oxidation in a softening furnace. After adjustment of temperature (to about 600°C.) the softened bullion is discharged into the top of a de-silverizing kettle. Zinc is added forming an alloy of lower specific gravity than the lead. This floats on the surface and lead-silver-zinc crystals which separate due to the cooling gradient maintained down the kettle also rise to the surface and are absorbed in the alloy layer. In this way the silver and gold are removed, and the de-silverized bullion collects in the bottom of the kettle. It is drawn off continually by a siphon discharge pipe. The third stage in refining consists of the removal of the zinc from the de-silverized lead by an oxidation process in a furnace similar to that used for the preliminary softening. A typical analysis of the refined lead shows 99.994 per cent. Pb. (An excellent description of the whole process has been given

by Williams in the Proceedings of the Australasian Institute of Mining and Metallurgy.)¹

Although iron ore only holds fourth place in value among minerals produced in Australia it is of fundamental strategic and economic importance, since (with coal) it is the basis of the whole iron and steel industry of the country, which is fundamental to most other manufacturing industries. The main deposits of iron ore at present being employed for reduction to metal are at the head of Spencer Gulf in South Australia; the coal fields from which the coal for coking is obtained form a great basin of which Sydney is approximately the centre. The ore is shipped to the coal fields and the two centres of smelting activity have been, until recently, Newcastle and Port Kembla, north and south of Sydney respectively. Since the war, however, a blast furnace has been blown in at Whyalla, near the iron ore deposits in South Australia, and ships carrying ore to the east coast are loaded with coal on their return to the south. The rapid development of the iron and steel industry since the first World War has been one of the most remarkable achievements of Australian industrial history; the fact that steel is produced in the Commonwealth probably cheaper than anywhere else in the world is an indication of the success which has been achieved by Australian engineers and scientists.

It probably came as a surprise to many people to find out that manufacturing industries were already well developed in Australia at the outbreak of the war and that we were able to commence, almost immediately, the production of munitions on an extensive scale to supply, not only the Australian services, but also defence forces of other parts of the Empire, and our Allies. We are not concerned here with the many reasons, both economic and other, which have brought about this development during the last two decades. The existence and probable

¹ Williams: "Description of Continuous Lead Refinery, at the Works of the Broken Hill Associated Smelters (Pty.), Ltd., Port Pirie, South Australia, 1932"—Proceedings of the Australasian Institute of Mining and Metallurgy, New Series, No. 82, p. 75.

further large-scale development of manufacturing industries in Australia must be accepted; we are concerned to-day with the scientific contribution to this development. It is well known that modern secondary industry depends largely for its success on scientific control for its maintenance and scientific research for its development. This has proved to be the case in Australia, particularly where, especially during the war, we have been in danger of being, to a great extent, cut off from contact with overseas practice, and thus thrown back on our own scientific and technical resources. The manufacture of munitions has already been referred to—this has included field-guns, machine-guns, anti-tank guns, anti-aircraft guns, ammunition of all kinds, armoured vehicles, tanks, aircraft, aero and motor car engines, machine tools, ships, and so on. The maintenance of the transport services of the country is a vast industrial undertaking. The manufacture of electrical equipment, the production of textiles from wool and cotton, the manufacture of lenses and optical instruments, paper, photographic materials, organic chemicals, paints, rubber products and plastics—all these are industries requiring the closest scientific control, and it is no exaggeration to claim that their establishment and successful development in Australia have been due in no small part to a realization of this. These examples of manufacturing industries in Australia could be added to almost indefinitely or they could each be discussed in detail. I should like, however, to say a little more about one of them only: the manufacture of paper. I know that this has been mentioned in a recent address to this Society on the Paper-Making Materials of the British Empire,¹ but I feel that it illustrates so well my theme of the importance of scientific research in industrial development in Australia, and deals with products so peculiarly Australian, that it is the best example I can choose for more detailed description.

The history of attempts to make a satisfactory paper from

¹ Furlong and Hill: "Paper-Making Materials of the British Empire"—*Journal of the Royal Society of Arts*, August 18th, 1944.

Australian timbers (Eucalypts), goes back to the time of the first World War, but as a background it should be remembered that papermakers all over the world declared emphatically that paper could not be made from eucalyptus woods. This was because eucalyptus fibres are approximately only one-third the length of most softwood fibres, and in breaking the bond between the fibres, which is essential for paper-making, the fibres are degraded. Also, in general, the lignin bonds between the eucalyptus fibres are stronger than the fibres are themselves. The main variety of timber used for paper production is *Eucalyptus Regnans*—the so-called Mountain Ash, a tree of great beauty, which grows to heights of over 300 feet on the mountain slopes in South-Eastern Australia. This variety is chosen because the lignin bond is weaker than in most eucalypts.

The paper shortage during the first World War was experienced in Australia, and in 1915, experiments were made on eucalyptus with chemical processes of pulping. The Sydney Technical College surveyed the possibility of Australian native timbers with promising results. In 1917 the Commonwealth Bureau of Science and Industry (which was later taken over by the Council for Scientific and Industrial Research) commenced work on the problem, and in 1918 successful blends of softwood pulps with eucalyptus pulps produced by the sulphate or Kraft process were obtained. In 1919 experiments were begun with mechanical pulps, but these were not very successful. The chemical experiments prospered over the next few years, and in 1926 the C.S.I.R. returned to work on the production of pulp by mechanical grinding. A company promoted to develop this process was caused to shut down by the depression. Meanwhile an Australian paper company was investigating the Kraft process and large-scale trials were carried out in Tasmania, and in America. In 1934, a semi-commercial scale trial in New South Wales confirmed the laboratory results and in 1937 a pilot plant producing 10 tons per day was started in Victoria. A full-scale plant was completed in 1939 and now produces some 40,000 tons per

annum. In 1935 a company started paper-making operations at Burnie, Tasmania, from imported Kraft pulp, but in 1939 started pulping Tasmanian timbers by the bleached soda process. In 1941, a newsprint mill was started, also in Tasmania, for the production of newsprint pulp by the mechanical process from *Eucalyptus Regnans*. In the year ending June 30th, 1944, this plant produced 26,700 tons of newsprint, more than half the Australian consumption. The research work undertaken originally by the Council for Scientific and Industrial Research, and later carried on in conjunction with the individual firms, has thus led to the setting up of three large companies, which between them produce a wide range of papers, either by a chemical or mechanical process. My object in thus outlining briefly the history of the paper industry in Australia is to show how, in spite of the difficulties involved and the conviction held by many that it was impossible, scientific research has made possible the establishment in Australia of this important industry, and what is more, made it practically entirely dependent on indigenous materials only.

Having now dealt all too briefly with the question of industrial development in Australia and its dependence on scientific effort, it should not be out of place to say something about science itself in Australia as applied to industry. Because my main work and interests are connected with scientific research I shall stress that aspect of it, though I am not one of those who believe that a scientific training fits one only for doing research at the laboratory bench. The indispensability of the scientific man for the technical control of industry is now taken for granted, and in this country I think it would be correct to say that his possibilities as a general administrator are beginning to be realized; whether this is yet the case in Australia I doubt.

In any consideration of the scientist in industry, mention should be made in the first place of the universities and technical colleges which are the sources of supply of scientific personnel. The success achieved by scientific workers in Australian industry

is an indication of the satisfactory training given by our educational institutions, since, generally speaking, the scientist is a local product. There is quite a number of Australian scientists holding high industrial positions in this country. On the whole, it may be said that Australian industry is aware of its dependence on the universities and technical colleges for its scientific staffs—the universities have benefited by munificent gifts from industry. At present, at any rate, the demand for scientific people for industry exceeds the supply, and if there is an expansion of industry in Australia after the war, the universities will also have to expand to keep pace, in much the same way as in this country there is a growing realization by industry of its dependence on science and scientific research. The position is not as satisfactory, however, as in the United States of America, and as yet it is the exception rather than the rule for Australian companies to have large research organizations of their own. Government research is, however, established on a very sound scale, and plans are being made for a considerable extension of its activities. There is in Australia no research organization, such as the Research Association of this country, intermediate between the straight-out commercial laboratory and the Government research station.

The principal Commonwealth Government research organization is the Council for Scientific and Industrial Research, to which reference has already been made. In a general way its policy has been to concentrate on problems common to one industry or a group of industries requiring long-range research, and possibly not producing immediate results; the more domestic *ad hoc* problems (often just as difficult or as pressing), are considered to be the province of industry itself. During the war, however, much *ad hoc* work had to be undertaken by the Council. The Council for Scientific and Industrial Research was instituted in 1926 by Federal legislation, displacing the already existing Commonwealth Bureau of Science and Industry. Its main finance is by annual grants from the Commonwealth

Treasury, but, in addition, it receives substantial contributions from industry for specific purposes. The Council's duties include the initiation and prosecution of research into problems of the primary and secondary industries of Australia; the training of research workers; the foundation of industrial research studentships and scholarships; the testing and standardization of scientific apparatus and instruments; the making of grants in aid of pure scientific research, and the setting up of liaison between Australia and other countries in scientific matters. Most of the Council's work is done in its own laboratories and field stations which are situated in various parts of Australia, though some investigations are carried out in universities and technical colleges. An indication of the size of the Council's activities may be obtained from the Annual Reports. The latest Annual Report¹ shows that the Council employs a total of about 390 scientific officers.

Prior to the war, its activities were mainly concerned with primary industry, and some of the results obtained in this field have already been mentioned. It may be interesting to list the laboratories and research stations at present engaged in problems of primary industry. At Canberra there are the Division of Plant Industry and the Division of Economic Entomology. The Division of Animal Health and Production has two laboratories, one in Melbourne and one in the grounds of the University of Sydney, in addition to field stations at Badgery's Creek in New South Wales and at Gilruth Plains in Queensland. The Animal Nutrition Laboratory in the grounds of the University of Adelaide, formerly a part of the Division of Animal Health and Production, has recently been raised to the status of a division, its title being the Division of Biochemistry and Nutrition. Soils investigations are carried out at the Division of Soils which works in close co-operation with the Waite Agricultural Research Institute of the University of Adelaide. Irrigation settlement investigations are made at the Commonwealth

¹ Commonwealth of Australia: Council for Scientific and Industrial Research: Annual Report for the year ending June 30th, 1944.

Research Station at Merbein in the Murray Irrigation Area, and at Griffith in the Murrumbidgee Irrigation Area. The Forest Products Laboratory in Melbourne is responsible for work on Australian timbers in all phases. The Division of Food Preservation and Transport in Sydney is proving of particular importance at present when the food production of the Commonwealth is being increased to meet the demands of the forces in that area. At Cronulla, near Sydney, is a Division of Fisheries which has been set up with the idea of investigating the possibilities of improving the fishing industry in Australia.

Not long before the war it was decided to extend the Council's active work in connection with secondary industries, and three new laboratories were set up—a National Standards Laboratory with Sections of Metrology, Electrotechnology and Physics, which is situated in the grounds of the University of Sydney—an Aeronautical Laboratory in Melbourne which has proved most timely in assisting the development of the aircraft industry in Australia—and a Division of Industrial Chemistry, also in Melbourne. Other investigations carried out by the Council are in the fields of Dairy Research, Lubrication, Friction and Wear, Ore Dressing, Radio Research and Biometrics.

Other Commonwealth Government scientific organizations include the Munitions Supply Laboratories which, like the Council for Scientific and Industrial Research, have undergone great expansion during the war, due to the great developments in Australian secondary industries. Their functions include research, investigation, consultative and advisory work in connection with specifications and design, manufacture, supply, preservation and use of war material on behalf of Government factories and private contractors carrying out defence work. Their influence on industrial development is obvious. The headquarters of the laboratories are in Melbourne, and there are branch laboratories in South Australia and New South Wales. The P.M.G.'s Department and the Commonwealth Analyst are other Commonwealth Government branches with scientific

laboratories directly connected with industry. There are also numerous State Departments, e.g., of Agriculture, Mines, Railways, Electricity Commissions, and so on, with similar scientific responsibilities.

I hope I have been able in this very brief review to sketch some of the scientific aspects of industrial development in Australia. It is certain that, as in other parts of the world, science in Australia must play an increasing part in future developments of industry. There are many problems to be solved in relation to industries which must be considered as essential for security reasons. Thus, to quote two examples, scientific exploration has so far failed to reveal any sources of flow oil in Australia—this work must be pressed forward, and, at the same time, attention given to the possibility of synthetic production of liquid fuels from coal. The brown coal deposits of Victoria are very similar to those used in Germany for this purpose. Rubber is another essential material and the possibility of growing plants in Australia to produce a natural rubber is already being investigated.

Apart from the security aspect the future prosperity of the country and its ability to support a much larger population depend largely on the development and balancing of its primary and secondary industries. Just as eternal vigilance is the price of peace, constant research is the *sine qua non* of industrial development. Reference has already been made to the plans which the wool industry has made for development of research—there are many other fields as yet almost untouched which could do similarly. A start along similar lines is being made by the fellingmongering industry. The development of chemurgic industries (chemical industries based on farm products), utilization of agricultural wastes, the growth of the flax industry, are all further examples. When extensive work can be resumed after the war there is a tremendous field for the Council for Scientific and Industrial Research Division of Fisheries. In the province of minerals and metals the possibilities are endless. During the war,

the manufacture of metallic magnesium has been commenced; and after much scientific investigation definite plans have been drawn up for starting an aluminium industry. The development and use of rarer metals like tantalum, columbium, beryllium, zirconium and others is a promising field. Organic chemical industry on a large scale has hardly been started in Australia. The investigation of Australian plant products such as alkaloids and essential oils, and the consequent development of industries based on them is a field which has hardly been touched. The application of scientific research to the building industry is of supreme importance when there is such a housing shortage to be overcome as at present.

These are just a few of the many problems connected with industrial development in Australia which await solution by the application of scientific methods. I have tried to show in this talk how important has been the scientific aspect of this development in the past, and the means which exist for ensuring its continuance and expansion in the future. It should help to ensure a strong and vigorous Dominion in the south, capable of making its full contribution to the development of the Empire as a whole.

SCIENTIFIC COLLABORATION BETWEEN THE UNITED KINGDOM AND NEW ZEALAND IN WAR AND PEACE

By A. L. POOLE and DR. I. E. COOP

Scientific Liaison Officers for New Zealand

GENERAL SCIENTIFIC CO-OPERATION

A. L. POOLE

THE TERM SCIENTIFIC CO-OPERATION IS AXIOMATIC. SCIENTISTS THE world over consciously or unconsciously assist one another in so far as they work upon and develop the accumulated knowledge of other scientists. It is true to say that the flow of scientific knowledge is free because of the practice, and indeed the necessity, for scientific workers to publish their results. Some work might remain hidden for a time, but eventually it finds its way out.

The importance of this scientific knowledge to a community cannot be gainsaid. It will be appreciated that any country, if it is to give a good account of itself in a world rapidly changing under the impact of science, must develop the science of those industries which are its main livelihood and keep abreast of scientific development in other fields. In times of war this becomes a matter of the utmost urgency.

New Zealand has attempted to do this: but with a population of only some 1,600,000 in a country a little larger than England, Scotland and Wales, she cannot have scientific services on the scale of larger countries; she must necessarily lag behind these, with their better equipped laboratories, in the development of fundamental science, as well as of much applied research. She endeavours, however, to keep abreast of this, particularly of

applied research, by specialized co-operation, and has given much thought to the development of this service.

The foundation of wider scientific co-operation was laid in the early days of the history of the Dominion, when the University of New Zealand was established. The first teachers were recruited from Britain, and the University itself was modelled along the lines of British Universities. The practice of recruiting British scientists into the New Zealand University still goes on, and so keeps it abreast of the most recent British teaching.

The custom has also grown up of many New Zealand graduates in science coming to Britain, either independently, or as holders of scholarships, to further their training and experience. These graduates are not compelled to return to the Dominion and many remain in Britain. Those who do return take back with them the advanced learning of British Science and those who remain frequently impart a freshness of outlook acquired from a young country.

In medical sciences it is the practice for a number of graduate doctors to proceed to the great English hospitals to specialize in some branch of surgery or medicine.

When we look beyond the sphere of university training to the field of research, we again find the closest co-operation with Britain. The exchange of literature and the personal exchange of views and information between scientific workers in both countries is proceeding all the time. Moreover, visits of scientists from one country to the other are frequent, and scientific representatives from both meet at imperial and international scientific conferences.

All the above methods of scientific co-operation have become common between many countries. But because New Zealand is a small and isolated country she has deemed it wise to build up more highly-specialized scientific co-operation in the form of scientific liaison services. This is being done under the Department of Scientific and Industrial Research.

An account of this type of service will no doubt be of greater

interest than a general account of the more usual type of scientific co-operation. Examples will therefore be given of scientific liaison work. A better understanding of these will be had if the New Zealand Department of Scientific and Industrial Research is first briefly described. It is under this organization that the greater part of scientific research in the Dominion is concentrated.

In 1926, Sir Frank Heath of the British Department of Scientific and Industrial Research visited New Zealand to advise on the setting up of a body to co-ordinate scientific research, and in 1927 an Act making provision for a Department of Scientific and Industrial Research was passed. An organization was formed somewhat along the lines of the British Department, but differing by the inclusion of most agricultural research which, in this country, is covered by the Agricultural Research Council. Because of the nature of the Dominion's industries, the newly-formed Department had, in fact, a preponderance of agricultural research. This preponderance remained to the beginning of the war, when physical and chemical research increased rapidly to service hastily developed war-time industry. There are also signs that, now that the war is over, there will be an accelerated development of research in connection with growing secondary industries.

In 1927 the newly-formed Department took under its wing all the existing Dominion permanent scientific services which consisted of the Meteorological Office, the Dominions Laboratory, Geological Survey and Observatories. Apart from developing pure research in these it formed institutes and branches covering research in fruit, dairying, animal production and health, entomology, social science, radio and all branches of plant life (agronomy, grasslands, plant diseases, soil science, fundamental botany, and later tobacco growing). It also developed subsidized industrial research associations in a manner similar to those developed by the British Department of Scientific and Industrial Research. These included wool manufacturing, leather and footwear, etc. They are being added to from time to time.

A scientific liaison service was commenced and later expanded.

The nucleus of the specialized scientific co-operation between New Zealand and other countries is the overseas liaison offices of the Department of Scientific and Industrial Research, the first of which was permanently established in London on the formation of the Department. Others have since the war been established in Australia and the United States of America, the latter serving Canada as well.

These centres carry a very small staff and could not cope effectively with all branches of science. Of considerable importance, therefore, in scientific liaison are the visits on special matters of New Zealand scientists to this and other countries, and the visits of overseas scientists to New Zealand.

The functions of the London Scientific Liaison Office of the Department are multifarious.

The Department subscribes to certain scientific institutions in this country. These are the Imperial Agricultural Bureaux, the Food Investigation Board of the British Department of Scientific and Industrial Research, the Wool Industries Research Association, and the Leather Research Association. Among the first duties of the London Office is, therefore, representation on the Food Investigation Board, and the Council of the Imperial Agricultural Bureaux, and keeping in close touch with the activities of all the above bodies in so far as they affect the Dominion. In addition, the Office acts especially as Imperial Agricultural Bureaux liaison office for New Zealand.

During the war it also had representation on a number of other committees of the Ministry of Supply, and bodies which covered research of immediate war concern.

In so far as much time of the Office is taken up in answering direct enquiries from its own and other departments in New Zealand, it is necessary to have a first-hand knowledge of the scientific institutions, and, to some extent, scientific personnel in this country, so that information may be obtained readily. Not infrequently it is necessary to obtain more than one view on the

same matter, and to endeavour to sum these up in a manner likely to give investigators at a distance a balanced account.

Any remaining time is used in paying general visits to research institutions and acting generally as "scavengers" of information. The service is, however, not all one way as it is frequently possible to pass on results from the Dominion and put workers here in direct touch with Dominion workers.

In all these diverse duties it is pleasing to be able to remark that great assistance is received by the highest degree of co-operation from British scientists and scientific institutions.

The development of high-grade agricultural products, mainly butter, cheese, meat, fruit and seeds, and the safe export and marketing of these is one of New Zealand's major concerns. A highly-specialized body of scientists has grown up both in Britain and in New Zealand around this trade. One must also mention here the Australian food technologists, who, because of the similar nature of trade of the two Dominions, have performed much excellent work in co-operation with New Zealand.

Liaison on scientific matters connected with this trade means close contact with such bodies as the Food Investigation Board—in particular, the Low Temperature Research Station and Ditton Laboratories coming under this body—the Dairy Research Institute at Reading, the Hannah Dairy Research Institute, the Cambridge School of Agriculture (Dr. Hammond), and so forth. Complementary bodies in New Zealand are the Dairy Research Institute at Massey College, the Fruit Division, Department of Scientific and Industrial Research, and the Agricultural Colleges of the University of New Zealand.

As an example of the type of work developed, the first Scientific Liaison Officer (Mr. Nevill Wright), in co-operation with Dr. Hammond and others, developed a method, now accepted internationally, of examining New Zealand frozen pork and bacon carcasses.

The defects arising in New Zealand fruit during transport have also entailed much work of a collaborative nature at both

ends of the line of transport. In this connection the New Zealand Department of Scientific and Industrial Research Fruit Research officer paid a lengthy visit to Britain to study methods adopted here for investigating defects and means of combating them.

The development of the chilled beef trade, in which New Zealand was participating before the war, was a result of discoveries at the Low Temperature Research Station. Its development required much careful technical investigation and control at all stages of handling and transport.

The predominantly agricultural nature of New Zealand makes plant research of special importance and much applied plant research has reached a high standard. Many New Zealand plant workers have visited this and other countries in pursuit of their studies and of plant material for introduction. General liaison on plant matters might best be illustrated by taking examples from each Division of the Plant Research Bureau of the Department of Scientific and Industrial Research.

This Bureau aims to cover all aspects of plant research and comprises Agronomy, Grasslands, Plant Diseases, Entomology, Botany and Soil Survey Divisions.

The *Grassland Division*, with its central station at Palmerston North, might be considered first. Since ninety-five per cent. of New Zealand's exports are derived from grass, it may be considered as the foremost economic crop. The work of this station is, therefore, of the utmost importance.

Although the Dominion has extensive indigenous grasses and grasslands, our most important grasslands are those sown with European species—rye-grasses, cocksfoot, timothy, dogstail and red and white clovers, etc. New Zealand has become very conscious of the high-producing strains which exist within these species, and, like the Aberystwyth Plant Breeding Station in Wales, has developed some of the best by selection and breeding. An Aberystwyth worker, Mr. William Davies, visited New Zealand in 1931 in connection with this work and, in 1938, Mr. Bruce Levy, Director of the New Zealand Station, visited this

country to attend the International Grassland Conference. Here he saw the Aberystwyth work. Breeding material has frequently been exchanged between the two countries. Some of the Aberystwyth productions, e.g. S. 100 white clover, have traces of New Zealand blood in them, and the reverse may be said of recent New Zealand introductions.

In 1941, New Zealand was privileged to be allowed to participate in the R.A.S.E. grassland trials laid down throughout England. The work has been arranged through the London Liaison Office and followed, in part, by this Office, by New Zealand agricultural workers who have been on loan to the Ministry of Agriculture and Fisheries for the past two years, and by the Dodwell Grassland Improvement Station, under Sir George Stapledon. The trials have resulted in the accumulation of much knowledge on the performance of New Zealand seeds in Britain, which, in turn, provides a sound basis to the not inconsiderable seed trade New Zealand enjoys with this country.

The *Agronomy Division* and *Wheat Research Institute* in New Zealand cover research on the Dominion's arable crops. These crops have, of course, been developed from European and American varieties by breeding and selection for local conditions. The Directors of both of these institutions have visited Britain and the Continent to study breeding methods and to collect varieties of crops which appeared suitable for New Zealand conditions. The Liaison Office also keeps an eye on new plant introductions in this country from the National Institute of Agricultural Botany, the Scottish Plant Breeding Society, and the Aberystwyth Plant Breeding Station and sees that New Zealand is supplied with samples.

The officer-in-charge of fruit research spent a period in England at stations such as East Malling, Long Ashton and the Low Temperature Research Station, studying fruit production as well as problems connected with the storage and transport of New Zealand fruits. One result of liaison on fruit production has been the introduction into New Zealand of the East Malling stocks.

These are now being propagated in the Dominion in a trade association nursery established for the purpose.

One of the most outstanding pieces of co-operation involving not only Britain and New Zealand, but also a number of other Empire countries, was the work of collecting South American potato species and varieties. This collection and subsequent investigation on it was made possible by contributions from several Empire countries. A New Zealand scientist from the Agronomy Division is at present working on this collection at Cambridge where it is housed.

Before leaving the subject of plants, a war-time development of importance should be mentioned. The establishment of the linen flax crop and its processing in the Dominion as a war-time measure, has been a major agricultural activity entailing much initiative and energy. Prior to 1939 linen flax was not grown in the Dominion, so that its development was a completely new industry. Knowledge on the growing of the crop had to be acquired from experience, and all the machinery for it was built in New Zealand from models and from blue prints forwarded from this country.

In general, the growing and processing of linen flax is undergoing somewhat of a revolution by the introduction of machinery; that is by the introduction of pulling machines in place of hand pulling, tank retting in place of dam and dew retting, turbine scutching in place of wheel scutching, and many other mechanical aids. The Liaison Office has kept very close watch on the development of this work and is represented on the Linen Flax Committee of the Ministry of Supply. Full access to all the work carried out under this body has been available. Trials of New Zealand linen flax fibre have also been undertaken by the Linen Industry Research Association, Belfast, and also by Scottish spinners.

An important war-time development has been the dehydration of foods and the development of types of rations for forces serving in difficult front-line conditions. New Zealand has

participated in the development of this work and has dehydration factories producing dried meat, vegetables, apples and butterfat.

The fundamental work for dehydration has been carried out in this country at the Low Temperature Research Station, and New Zealand has leaned heavily upon it in starting her own operations. The production of a high quality product has involved detailed work on the technique of dehydration, on the methods of packaging, safe moisture contents and storage properties of the product. When New Zealand first launched upon dehydration it was necessary to keep her fully informed of the work as it progressed at the Low Temperature Research Station, and in the pilot stage plants in this country. Since then information has also been exchanged on the operational methods employed on the full-scale plants in the two countries.

It has already been noted that the Dominion Chemical Laboratory was included in the newly-formed Department of Scientific and Industrial Research in 1927. At that time the Laboratory performed mainly routine services for customs, the milk distribution industry, etc. Since its incorporation with the Department it has developed the research activities. The services of the Liaison Office are frequently called in on certain projects, more particularly in connection with the development of New Zealand raw materials.

For instance, *bentonite* was recently discovered in New Zealand and samples have been sent to this country for testing at suitable research stations. Likewise, a wax somewhat similar to *Montan wax* extracted from Chatham Island peat, was recently examined by arrangement with the Imperial Institute.

The Dominion is unfortunately poor in minerals upon which to base secondary industries. It possesses, however, some clays and other materials, suitable for *refractories* and *ceramics*, and a small industry is already in being. Recently stock has been taken of the raw materials for this industry with a view to developing them. In this connection, interest has been taken in the ceramic and refractory research proceeding in Britain. The Liaison Office

has developed contacts with sources of information such as the British Refractories and Potteries Research Associations, and two visiting New Zealand scientists have specially studied certain aspects of the research carried out at these institutions.

For some time *building* has been a matter of national concern in the Dominion and the Government has made it its policy to see that housing has been adequate and suitable. As a result, the State is now the largest house property owner in the Dominion. It is, therefore, concerned with advances on building in general, and, being a landlord, particularly on those aspects dealing with the quality of building materials and prevention of housing from deterioration. To cover these matters the Department of Scientific and Industrial Research has set up a Building Research Committee, and two officers have been sent overseas to study aspects of building research: one visited this country in connection with building materials and their testing. These officers will form the nucleus of a Building Research team in the Dominion.

The Liaison Office frequently calls upon the good services of the Imperial Institute to review the literature on certain raw materials in which our Department is interested. Sometimes tests of New Zealand products are even arranged through the Institute, a case in point being tests on New Zealand produced agar-agar. On Japan's entry into the war, and the stoppage of agar supplies, New Zealand produced experimental lots from indigenous seaweeds. Samples were thoroughly tested by the Imperial Institute and were pronounced to be equal to the best Japanese. Since then large-scale production has been undertaken in the Dominion, and sufficient produced to supply our own needs for pharmacy and the food trade. It appears that a small permanent industry has been established in the Dominion, as the Maoris living around the coastline have taken enthusiastically and skilfully to the collection of the raw material.

A most highly-developed form of scientific co-operation from which New Zealand draws benefit is the service developed by the Imperial Parasitic Service, of supplying insect parasites. This

work involves the skilled collection of the insects and tricky transport of cocoons or other stages over long distances. These insects cannot be released in the new country until they have been widely tested to ensure that they will not harm useful insects or plants. Once this has been determined they must be reared in large numbers for liberation.

A number of insect parasites have been introduced into New Zealand. Perhaps the most successful has been a parasite obtained from this country for the control of the white butterfly.

In the course of liaison enquiries many other British scientific research institutions are visited. Work of outstanding interest to the Dominion at the moment is that on pest infestation at the Pest Infestation Laboratories, Department of Scientific and Industrial Research; on rodent control at the Bureau of Animal Population, Oxford, and the Pest Infestation Branch of the Ministry of Food; on prevention of wool shrinkage at the Wool Industries Research Association, Leeds, and much else.

SPECIALIZED WAR-TIME SCIENTIFIC CO-OPERATION

Dr. I. E. Coop

You have just heard from Mr. Poole the manner in which collaboration between our countries is effected on the broader aspects of science, both in peace and in war. Since the war began a new field of scientific collaboration has emerged consisting of the special developments in science which are of military value. Naturally most of these are still of a secret nature, and I hope you will accept my apologies if my remarks are worded in terms of vague generalities rather than in precise details. We are all aware that the inventiveness, ingenuity and skill of British scientists is not exceeded by that of any other country, and is in large measure responsible for the technical superiority in arms which the Allies acquired over the enemy. Complete informa-

tion concerning the great majority of these scientific developments has been made available to New Zealand just as it has to the other Dominions and to the U.S.A.

This new field of collaboration was really an offshoot of that which already existed between the Governments of various countries within the Empire. It was thus natural that in New Zealand the Department of Scientific and Industrial Research should be made the responsible body. One should not exclude from this the Navy, Army and Air Force in New Zealand, which, though more interested in the finished article than in its scientific development, were nevertheless fed with information by their respective parents in the United Kingdom. The Services in New Zealand co-operated with the scientific authorities in the shaping of policy in the same way that they do here so that their influence on the ultimate results of scientific effort was not inconsiderable. United Kingdom and New Zealand collaboration in this field first began in 1939 and 1940 when senior Dominion scientists were invited to the United Kingdom to see the developments which were taking place. These early visits by New Zealand and also Australian scientists not only laid the foundation for immediate developments in our countries along similar lines, but also opened up avenues of communication between New Zealand and the Research Departments of various Ministries here. This incidentally also initiated a fruitful co-operation between Australia and New Zealand which has been maintained ever since.

With the information obtained from the United Kingdom in the early years of the war, we were able to build in New Zealand a considerable number of radiolocation or radar sets. These were of a type to meet our special needs as an isolated island country in the Pacific. Moreover, at that time Britain was more than occupied in Europe and could not spare complete equipments. We were out of range of enemy air attack but we were not out of range of seaborne attack on our shipping and on our ports, as events soon showed.

Developments were proceeding at such a pace here in this country and were of such value that in 1941 New Zealand decided to post a scientist in London to act as liaison officer in these matters. This was a timely move for, at the end of 1941, the Japanese made war on us in the Pacific, and we were in real danger for the first time in our existence. The scientific liaison office thus established was responsible for the collection of information and its despatch to New Zealand, and for answering the many technical enquiries that arose from New Zealand. In this, the various Ministries distributed their reports and secret documents to us for despatch to New Zealand and gave us facilities for visiting their research establishments to see and to obtain particulars of any of their developments. This was in addition to the concrete physical assistance given in the way of actual scientific war equipment. The visits to research establishments and the contacts made both there and in the headquarters in London, greatly helped the collection of information and permitted us to obtain details on those very things which were of application to our peculiar needs in the Pacific.

The doors of the Admiralty, War Office and Air Ministry have been open to us, so have those of the many research and development establishments of the Admiralty, the Ministry of Supply, the Ministry of Aircraft Production and the Ministry of Home Security. In spite of urgent matters demanding attention closer at hand, their staffs have found time to consider and advise upon problems arising from New Zealand.

During this time the scientific resources of New Zealand were mobilized and development and production put in hand. The major scientific development undertaken in New Zealand was in radar and to this end the Radio Development Laboratory was set up. This laboratory was responsible for the development of prototype radar and radio equipment and because of the easier interchange between small organizations in a small country, personnel from the laboratory were able to assist in the manufacture of the equipment and in its subsequent operation against

the enemy. At the four university colleges constituting the University of New Zealand, extra-mural development work was done in engineering, radio, optics, chemical warfare and other subjects, all of which was under the direction of the Department of Scientific and Industrial Research. A contribution was also made by New Zealand scientists in the fitting and repair of complex scientific equipment being installed or used by the Services.

In the campaign in the Solomon Islands a considerable amount of equipment was used which had thus been developed and produced in New Zealand. That would not have been possible had it not been for the information which had so generously been supplied to us by the United Kingdom. The experience which had been gained by New Zealand in tropical warfare in the Pacific put us in a position to supply scientific information to the United Kingdom on operational conditions out in the Pacific. It is hoped that this information, together with larger amounts from Australia, will be of value in the design and operation of special equipment manufactured in this country for use in the Far East and in the Pacific.

Returning to the radio field again we have, since the beginning of the war, set up a number of ionospheric recording stations in the New Zealand area which are providing information of value to the United Kingdom, U.S.A. and Australia in the forecasting of the optimum conditions of radio communication. This return of information is a very small percentage of that which has been afforded to us but it illustrates that our scientists are anxious to afford the United Kingdom all the assistance that they can give.

One other form of collaboration of considerable importance is to be found in the exchange of scientific personnel. The United Kingdom has, during the war, sent to New Zealand a number of specialists, some in uniform and some civilian, to advise the New Zealand Government and the Services on technical matters, and to give them the benefit of the experiences which were gained here in the early days of the war. This has been balanced,

and I think, on the whole, outweighed by the contribution which has been made by the considerable numbers of New Zealanders, scientific and technical men, who are to be found in every ministry and university in this country. Most of them have been here since the war began, others are on loan for a limited period, and their contribution has been a very notable one.

When one compares the number of radar sets and other defence equipment made in New Zealand with the thousands of tons of butter, cheese, meat and wool produced and supplied to the Forces, the results of scientific effort in New Zealand in the military sphere look rather insignificant. But at a time when our existence was threatened, and particularly since we took the offensive in the Pacific, the results of scientific collaboration and scientific effort cannot be counted in the number and size of the scientific devices used, but rather in the effect which they produced on the general outcome of the war. In the broader sense still the free exchange of secret scientific information between Governments and the collaboration between British scientists and New Zealand scientists is helping materially to maintain and extend the whole sphere of collaboration, not only scientific, between our two countries.

INDUSTRIAL DEVELOPMENT IN THE UNION OF SOUTH AFRICA

By A. P. VAN DER POST

*Senior Trade Commissioner for the Union of South Africa in the
United Kingdom*

ADDRESSING A CONFERENCE OF THE TRADE AND LABOUR COUNCIL recently, Field-Marshal Smuts said, "South Africa is now on the *Great Divide*—hitherto mainly an agricultural country, there is no doubt that South Africa now is destined to become largely an industrial one. Our country is going to be industrialized on the largest scale. Mineral engineering and manufacturing industries will be developed, and will bring with them great problems."

Although the Prime Minister realizes that the change-over from war-time to peace-time economy will be beset with difficult problems, he nevertheless is confident about the industrial future of the Union. Everyone who has given thought to the matter appreciates, as the Prime Minister does, that secondary industry in South Africa still has a long road to travel—a road full of obstacles, but obstacles which, in the words of the Prime Minister, will be overcome if public co-operation continues as it has done during the war.

Although the past quarter century has witnessed great progress in industry, the Union is still only at the threshold of industrial development. That it could not be otherwise is evident from a brief survey of the country's economy since first the European decided to establish himself on its soil.

Jan van Riebeeck landed in Table Bay in 1652 to found a half-way house at which the sailors manning the ships of the Dutch East India Company could rest on their long voyages between

the Homeland and the East Indies. Soon, however, servants of the company obtained permission to undertake farming operations on their own account, and, during the succeeding two hundred years, there followed a gradual movement away from the Cape into the interior, until by the middle of the nineteenth century all the territory now constituting the Union of South Africa had become settled. With the movement away from the Cape, however, contact with the outer world became less and less close, and the character of agriculture changed from a more or less intensive form of viticulture and vegetable production to a very extensive form of pastoralism. For more than two hundred years the country remained practically a purely pastoral area with little external trade. This period, from 1652 to 1867, the year of the discovery of diamonds, forms the first—and thus far longest—period in the economic development of the Union and may briefly be termed the *Pastoral Period*.

The year 1867 may be said to end the first and to introduce the second period, one which has been termed the *Agricultural-Mineral Period*, and covers the years 1868 to 1909. This period witnessed a great change in the economic organization of the country and the establishment of a much closer contact with the rest of the world. The development of modern means of transport and communication greatly contributed to this change, but internal factors such as the discovery of diamonds, but more particularly gold, were the primary factors that caused the country's economic pattern to change from a simple self-sufficing pastoralism to a complex and varied economy, based upon the closest association with other countries.

During the second half of this period and beyond to this day, the Union's gold production, the greatest in the world, more and more determined the country's economy. The discovery and consequent mining of gold changed both internal economic set-up and external relations. A large influx of population was encouraged and an enormous inflow of capital attracted, resulting in the development of the Witwatersrand gold-mining industry,

and the creation of a comparatively large inland market, centred in Johannesburg. Moreover, quick transport to and from the coast became essential, and in consequence a great railway-net, primarily from the principal ports, but also, although to a less extent, from inland areas, converging on Johannesburg was developed. Gold, indeed, altogether changed the country's economic life and gold-mining became the hub about which all economic activity revolved—gold for long has been not only the Union's principal export commodity, but also the principal contributor, both directly and indirectly, to the National Exchequer.

Gold-mining had a great influence on agriculture, for with increased and increasing population a home market began to develop which justified a more intensive system than mere pastoralism. Farming of the ranching type began gradually to make place for a more truly agricultural and diversified system of farming in which maize production, dairying, fruit and even vegetable cultivation in time came to be important factors.

The discovery of diamonds and gold resulted in the opening up of the interior, and so led on to the discovery of rich deposits of other minerals, for it is in the interior that the majority of mineral deposits are to be found. Next to gold and diamonds, coal constitutes the principal mineral product, but important other minerals and mineral ores are asbestos, chrome, copper, corundum, dolomite, fluorspar, gypsum, limestone, iron ore, manganese, platinum ore, tin ore, tungsten. In its mineral deposits, therefore, the Union possesses a source of valuable raw materials for use in the development of secondary industry.

In this second period the beginning of secondary industry is to be found, for the mines established their workshops as also factories for the manufacture of explosives, while the Cape Government Railways, for example, established important railway workshops at several places.

To summarize the development during the two periods briefly described above, it may be said that during, roughly, the first

two centuries after the landing of the Dutch in Table Bay, South Africa remained mainly a pastoral country but that in the second half of the nineteenth century the discovery of diamonds and gold changed it into a mining country, and ensured that expansion of population which was an essential pre-requisite of secondary industry.

A third period in the economic development of the country may be said to have been inaugurated with the consummation of Union in 1910. Instead of four different governments there now was one government, and it became possible to have a single policy not only in the political field, but also in the economic and social field. Union of the four self-governing colonies, therefore, completed the foundation upon which secondary industry could build. This third period, from 1910 to the present day, has been called the *Agricultural-Mineral-Industrial* period. The name, unfortunately, is not too attractive, but it does correctly describe the present economic pattern of the country, in which agriculture and mining occupy most important positions, while secondary industry is gradually claiming and justifying a more and more prominent place.

Since Union, in 1910, secondary industry has made great strides and under the stimulus of two great wars, the Union definitely has entered the industrial phase of its development. Sufficient support of this statement is offered by the following facts: In 1911 the cost of raw materials used by secondary industry was £9,389,000 and the value of the gross output £17,248,000; in 1921 the value of raw materials had reached the figure of £57,965,000, and that of gross output £98,308,000; and by 1939 they had risen to £101,472,000 in the case of raw materials and £199,617,000 in that of gross output. The increasing importance of secondary industry in the Union's economy is also attested by the steadily increasing net value of industrial output—thus in 1915-16 the net value was £16,872,196, in 1920-21 £37,545,775, in 1925-26 £40,932,826, in 1929-30 £51,532,794, and in 1936-37 £80,573,262.

A third method of measuring this growing importance of secondary industry is the progressive increase in the contribution made by industry to the national income. According to an estimate made by Professor H. S. Frankel, of the University of the Witwatersrand, this contribution for the financial year 1924-25 was £28,000,000, or 12.3 per cent. of a national income of £228,000,000, and occupied fifth place amongst the items included in that income. In 1937-38, according to Professor Frankel, the contribution was £66,000,000, or 17.7 per cent. of a national income of £394,000,000, and had risen to second place, being exceeded only by the contribution of the mining industry. In 1940-41 the contribution had increased to £85,000,000, or 18 per cent. of a national income of £472,000,000, and again was second only to the contribution from the mining industry, although the difference between it and the mining contribution was relatively smaller than in any of the three preceding years. At this rate of progress the time would not appear far distant when manufacturing industry will rank first as a contributor to the national income.

The rapid development after the first Great War was due, on the one hand, to the establishment of new undertakings under the stimulus of war, and, on the other hand, to encouragement under a moderate tariff-policy, introduced in 1925 when the Union decided to replace its purely revenue-tariff by a protective-tariff. During the past four years industrial activity has still further increased, in fact probably more than in any other comparable period, as a result of the present war's impact on the Union's economic organization. The effect of this latest development is bound to be permanent and to extend to post-war industry.

The Union's industrial activity displays considerable variety. There are a large number of privately-owned factories and the number is still increasing. In 1939 their number was 10,256, grouped into seventeen classes of industry, namely, (1) Raw Material; (2) Stone, Clay, etc.; (3) Wood; (4) Metals, Engineering, etc.; (5) Food, Drink, etc.; (6) Clothing, Textiles, etc.;

(7) Books and Printing; (8) Vehicles; (9) Shipbuilding; (10) Furniture; (11) Chemicals; (12) Surgical Instruments; (13) Jewellery; (14) Heat, Light and Power; (15) Leather and Leatherware; (16) Building and Contracting and (17) Other Industries.

Industrial activity, however, is not confined to private undertakings. The South African Railways and Harbours Administration, which in terms of the Act of Union is a government institution, with a Cabinet Minister at its head, has for long been the leading manufacturer, be it only of its own requirements. Two other great concerns, both of a semi-public nature, have been developed during the past sixteen years to be its close second, the statutory *Electricity Supply Commission* (popularly known as *Escom*) established in terms of the *Electricity Act*, No. 42 of 1922, and the *South African Iron and Steel Industrial Corporation Limited* (popularly known as *Iscor*), established under the *Iron and Steel Industry Act*, No. 11 of 1928. The latter body in particular has proved the very backbone of the Union's industrial effort in the supply of military requirements in the recent great struggle, although yeoman service has been rendered by many other agencies, such as, for example, the workshops of the South African Railways and Harbours Administration, the Mines, the Mint and Escom.

Not only the State, however, but also city councils and municipalities to some extent control industrial undertakings, mainly in the provision of light and power.

The State is ready to encourage and assist the establishment of undertakings which are likely to render an efficient service to the community. To this end, a very important step was taken in 1940 when Parliament passed the *Industrial Development Act*, No. 22 of 1940. The purpose of this Act was to establish a public company, termed the Industrial Development Corporation, to promote the establishment of new industries and industrial undertakings and the development of existing industries and undertakings. The Act provides that the Corporation shall have a share capital of £5,000,000, all of which shall be taken up by

the government and paid from moneys appropriated by Parliament. The shares are divided into "A" and "B" shares, but only the latter are transferable. They may be taken up by transfer of "B" shares in the South African Iron and Steel Industrial Corporation Limited or be disposed of by the Governor-General as he thinks fit. The "A" shares are not transferable except by Act of Parliament, and entitle the Governor-General, as holder, to a number of votes which shall always exceed by one the total number of votes of all the other shareholders in the aggregate. By this *Act*, it has been said, the State took the first step in the rationalization of industrial development in the Union, avoiding assistance to industry out of consolidated revenue funds and limiting its participation by means of shares in the Corporation.

Section *three* of the *Act*, establishing the Corporation (briefly known as the I.D.C.) defines its objects to be:

"(a) With the approval of the Governor-General to establish and conduct any industrial undertakings; and

"(b) To facilitate, promote, guide and assist in the financing of:—

- (i) New industries and industrial undertakings, and
- (ii) Schemes for the expansion, better organization and modernization of, and the more efficient carrying out of operations in existing industries and industrial undertakings, to the end that the economic requirements of the Union may be met and industrial development within the Union may be planned, expedited and conducted on sound business principles."

The *Act* further empowers the Corporation amongst others: (a) to promote or assist in the promotion of industrial undertakings; (b) to assist in the subscription of capital required by any proposed industrial undertaking or for expanding or modernizing any undertaking, by loan or by acquiring an interest in such undertaking or by underwriting the subscription of the capital required; (c) to acquire, hold and deal in both immovable and movable property, including stocks, shares, securities, etc.; (d) to

raise loans or borrow money by the issue of debentures; and (e) to act as manager or secretary of any company and to appoint a representative of the Corporation to serve on any company, for example, as a director.

The most important part of the Corporation's functions, its Chairman emphasized at the Fourth General Meeting in December last, is that the Corporation shall assist private enterprise in the financing of industries. While the Corporation, therefore, has been established to promote industry, it shall, according to Section *five* of the *Act*, be its duty so to exercise its powers:—

(a) that every application or proposal dealt with by it is considered strictly on its economic merits, irrespective of all other considerations whatsoever;

(b) that all matters relating to the raw materials necessary for carrying on the industry or industrial undertaking or the proposed industry or industrial undertaking, to the labour supply available for the carrying on thereof, to the rates of wages proposed to be paid and to the markets available for the disposal of the products thereof are carefully reviewed; and

(c) that generally, the activities of the Corporation are directed towards guiding and assisting others in financing the establishment or development of industries or industrial undertakings, and that, so far as may be practicable, the Corporation shall not be required to provide an unduly large proportion of the capital which is necessary for such establishment or development.

Although only four years old, the Corporation has, according to the latest report submitted to the annual general meeting, made considerable progress in fulfilment of the objects for which it was established. Details about the nature of the industries assisted, however, the Corporation does not feel justified to give because, in the words of its Chairman, "it has a very important obligation to its clients in the preservation of the strictest confidence and . . . (in observing) the confidential nature of its

work." According, however, to its Balance Sheet the Corporation had till the end of 1943 made loans and advances to the amount of £268,276, and subscribed stocks and shares to the amount of £630,809, while there were contingent commitments amounting to £1,409,532.

"The two figures for Loans and Advances and Stocks and Shares in industrial undertakings," the Chairman emphasized, "taken together and amounting to £899,085, give some indication of the assistance rendered by the Corporation in the establishment and development of industries in South Africa. The figure of contingent commitments, namely, £1,409,532, is an indicator of the work of development which the Corporation has in hand, and the potential development of industries possible with the assistance of the Corporation under more favourable world conditions . . ."

South African industry to-day relies to a very considerable extent on South African raw material. In the year 1939-40 it used raw material of local origin to the value of £55,593,876, as compared with imported raw material to the value of £45,597,840. Those directly concerned with industrial development, such as Dr. H. J. van der Byl, Chairman, and Dr. H. J. van Eck, Deputy Chairman and Managing Director of the Industrial Development Corporation, have also classified South African industries according to the raw material sources upon which they depend. On this basis industries which use South African raw material may be grouped in three classes—*first*, those which use the products of agriculture and forestry, *secondly*, those which utilize mineral materials, and, *thirdly*, those which rely on the products of other industries for their raw material.

The agricultural raw materials comprise about 45 *per cent.* of the value of all South African raw materials and approximately 22 *per cent.* of the value of both local and imported raw materials used by industry. They include skins, hides, wool, wood, wattle bark, tobacco, cotton seed and lint, animal products such as

meat, milk, butter and cheese and more purely agricultural and horticultural produce such as maize, wheat, fruit and wine.

The mineral raw materials consist principally of iron ore, limestone, dolomite, coal, manganese ore, chrome ore, copper ore, asbestos, fluorspar, barytes, corundum, gypsum, tungsten, gold, diamonds, and tin ore.

The raw materials which are products of other industries, include pig iron, steel, cement, sugar, salt, paper, chemicals, boxes, soda, glycerine and vegetable oils. In this class should perhaps also be included the fish preserving industry, for the South African sea is an important source of raw material.

Dr. van Eck, to whom the credit of this classification belongs, states that imported raw materials can also be classified according to the general scheme adopted for South African raw materials. Thus, South African industry utilizes imported agricultural products, such as wool, particularly cross-bred wool in blanket manufacture, hides and skins, vegetable oils, cocoa, rubber, fibres such as cotton and sisal, seeds, pyrethrum flowers, spices and many more. It also uses mineral products, such as paraffin wax, asphalt, bitumen, sulphur, gypsum, phosphate rock, soda and many others. Finally, it uses raw materials which are the products of other industries, for example, iron and steel, paints and their constituents, vegetable oils, cardboard, paper, acids, caustic soda, soda ash, cyanamide, glycerine and tinsplate.

Individual branches of industry rely in varying degree upon either local or imported raw materials. It is impossible in this brief review to examine this aspect of our subject in detail, but it may be interesting briefly to examine a few typical cases to illustrate this diversity.

On the basis of value of output the food, drink and tobacco industry is the most important of South African secondary industries. Its gross output in the last pre-war years was equal to approximately £48,000,000. The value of local raw material used by it was £28,000,000 as compared with only £3,000,000 worth of imported materials, that is, roughly 90 *per cent.* local

be much room for expansion because the seas round South Africa's coast abound with life capable of yielding products of high food value.

Second, in terms of value, to the food and tobacco industry ranks the metal and engineering industry. The gross total value of its output in the last pre-war year was £31,000,000, of which £17,000,000 represented added value. It utilized some £13,800,000 worth of raw materials, of which material to the value of £6,600,000 was of local origin and £7,200,000 imported. In contrast with the agricultural processing group it relied for slightly more than 50 *per cent.* of its requirements upon imports. This position, however, is bound to have changed under war conditions because shipping stringencies have forced the industry to rely more and more on local materials. The Union is particularly fortunate in having an abundance and variety of mineral deposits, some of a low grade but others of a very high grade. For example, there are enormous quantities of chrome ore, but not of the highest quality; on the other hand, the Union's huge deposits of iron ore are amongst the best and cheapest in the world. The Union's steel industry, Dr. van Eck, the Managing Director of the Industrial Development Corporation, tells us, has a great future but will have to meet the competition of lighter metals after the war. This, he considers, it will be able to do by utilizing the Union's extensive supplies of chromium ore for the production of high-grade alloy steels which will compete in weight, strength and utility with the light metals. It is his considered opinion that the production of ferro chrome, chrome steel and chromium alloys can be developed into one of the most important industries in the country.

The metal and engineering industry produces a great variety of products such as iron and steel pipes, steel construction material, rock drills and spare parts, drill steel, tanks, steel platforms, gates, steel furniture, wheel-barrows, tinplate articles and electrical apparatus. Its development it owes largely to the great expansion of the gold-mining industry, which is to a large extent

serviced and maintained by the Union's engineering industry. With the establishment of the Iron and Steel Corporation, however, the development of new fields became possible, and as a result the Union was able, when the demand arose, to be not only the repair shop of the Middle East, but also the supplier of ammunition, guns, armoured cars and much more. Recent entry into new fields has been the establishment of an agricultural implements plant and a large malleable iron foundry.

In contrast with the food, drink and tobacco industry, which in 1939 utilized 90 *per cent.*, and the metal and engineering industry which used 48 *per cent.*, of South African raw material, there is at the other end of the scale the clothing and textile industry which relied almost entirely on imported material, obtaining only 5 *per cent.* of its requirements in the Union. This appears rather strange in view of the fact that the Union is such an important producer of wool, but is not surprising if one takes into consideration the comparatively small population of the country, and the fact that roughly 75 *per cent.* thereof—the great native population—are unskilled workers of very low earning capacity. Thus far the textile industry has produced mainly Kaffir sheeting and blankets, for which it required cross-bred wool not produced in the country. During the past four years of war great advance is reported in the production of blankets for the army, in the manufacture of which high-grade local material has been used in place of imported cross-bred wool. The extension of the industry for the production of higher quality textile materials than blankets and sheeting has been receiving careful attention during the past few years on the part of wool farmers, the Industrial Development Corporation and even the State. New developments would appear merely to await more settled conditions, when it may be expected that the textile industry will be expanded to absorb more—but certainly not the bulk, as some reports have indicated—of the locally produced wool.

Other groups of industries rely in varying degree upon local

and imported raw material—on the 1939 basis the building and contracting industry and the leather and leatherware industry each utilizes about 50 *per cent.* of local and 50 *per cent.* of imported materials; the heat, light and power industry uses local and imported raw materials in the proportion of (roughly) 80 to 20, but the chemical industry uses them in the proportion of (roughly) 24 to 76, and the vehicle industry in the proportion of (roughly) 12 to 88. In the case of some groups which have in the past relied mainly on imported material some change in the direction of a greater proportionate use of local material may be expected as a result of forced reliance on local material during the war. What factors will determine such a development, and in which groups and the extent to which it is to be expected, are questions which cannot be examined to-day. An interesting illustration, however, of how local material can supplement, or even supplant, imported material is afforded by the chemical industry. During the first Great War, the industry had to rely on imported material for the production of the two most important acids used in dynamite production. To-day, sulphuric acid, the first of these two acids, is largely manufactured from iron pyrites obtained from the gold mines instead of from imported sulphur, while nitric acid, the second acid, is, with the use of locally produced coke, made from atmospheric nitrogen.

The sponsors of secondary industry in the Union claim that its development is essential if the national income, the standard of living of all classes (the natives included), and the productivity of all labour shall be increased. They view it as a great factor in social progress and as a great contributor to the raising of the purchasing power of the masses (the natives again included). Thus Dr. H. J. van der Byl, the Director of the War Supplies Board and Chairman of the Electricity Supply Commission, the Iron and Steel Corporation, and the Industrial Development Corporation, recently stated that "our effective population can be very considerably enlarged by making better provision for and increasing the productive capacity of our natives and un-

skilled whites. These people do not ask for charity . . . they want and are entitled to opportunity." Dr. van der Byl sees in increasing industrial activity the means of creating that opportunity and raising the earning capacity as well as the standard of living of what one might perhaps call the depressed classes of the Union's population. In this connection it is interesting to note that the most recent Industrial Census of the Union (1938-39), which did not cover mining and quarrying, indicated that 10,256 factories employed 352,500 people, of whom 144,378 were Europeans and 207,662 were non-Europeans, and distributed over £46,000,000 as wages during the year.

So far I have only casually referred to South African industry's contribution to the war effort. As Mr. H. Moolman, formerly Public Relations Officer at South Africa House, before his departure read a paper to the Society on this subject, it is not necessary to deal with it at length to-day. Sufficient be it to record that South Africa has made a great contribution in the supply of processed foodstuffs as well as mechanical requirements. The extent of industry's war effort will, of course, only be known after the cessation of hostilities, and I may, therefore, be pardoned for quoting from a recent address by Dr. van der Byl to illustrate that effort:—

"Guns were planned, tooled and produced in much less time than we know of anywhere, and every ounce of them, including bullet-proof tyres, was made in South Africa; to meet the special steel requirements for armaments no less than 120 different types of special steels never before made in South Africa are being manufactured including high-speed tool steel. Automatic machines for making small arms cartridges were made in large numbers and that without any drawings to start on; mortar and gun sights, things that were quite out of South Africa's range, are being made in large numbers, and thousands were supplied to England; Iscor's number three Blast Furnace and the Ferro-alloy works at Vereeniging were built almost entirely in South Africa; so with automatic shell forging plants which were built

and put into operation in exactly half the time given for delivery from abroad; aircraft hangars, measuring 125 ft. by 95 ft. by 25 ft. to the eaves, which before the war took from four to six weeks to build, have for a long time been turned out at the rate of thirty complete buildings per month. When a review was made last October of our industrial war effort it was found that South Africa had actually produced more of certain types of shells and bombs than either Canada or Australia. Our armoured cars, which are a hundred per cent. South African design, have become famous and amply share in the credit for the conquest of Abyssinia. Our designs of army boots and blankets, with their envied fame abroad, run into seven figures, and we have already turned out close on half a million spare parts for tanks, other vehicles and aircraft."

In conclusion, there is no doubt that, now that victory has been won, South Africans will listen with pride to the story of Union industry's response to the call for the fight for freedom and of its contribution to the attainment of victory.

NOTE

The following extract from an article on "A General Review of the Union's War Supplies Effort, 1940-44," which appeared in the November, 1944, issue of the Director General of Supplies Bulletin, will serve to illustrate the contribution Union industry has made to Victory:—

While South Africa may rightly take a pride in her achievements with limited man-power and a not highly developed industrial background, her output is only a small, although carefully integrated, part of total Allied production.

At this stage it is particularly appropriate to review the position in view of the fact that some of the programmes are drawing to a close and production is being changed to meet the new needs. Despite changes, however, there is no indication of any relaxation in the demands on the Union either now or for Stage 2 of

the war, when the knock-out blow to Japan is delivered. Among the major items of production the following is a schedule of deliveries:

More than 50,000 tons of shells and shell cases.

More than 28,000 tons of mortar bombs, grenades and landmines.

Nearly 20,000 tons of small arms ammunition.

Over 70,000 tons of high explosive bombs.

Over 6,000,000 pairs of army boots.

Over 4,500,000 blankets.

Over 14,000,000 items of personal equipment and clothing.

In addition, there has been a great production of engineering stores which includes special road-building equipment, bridges and aeroplane hangars. Over 35,000 motor vehicles have been constructed and approximately a million vehicle and aircraft tyres manufactured in Union factories.

In current production great importance attaches to aircraft bombs, and many of the thousand-pound bombs South Africa has produced in the past are now being used against Germany on the Western Front. Great tonnages of steel and explosives are going monthly into this production. In addition, the Union is still making a very large monthly quota of practice bombs for training and other special uses.

In ordnance plants, South Africa is now changing over, as previously announced, to a type of gun most suited for jungle warfare and is not only producing shells for that type of gun, but has also accepted a heavy programme of 25-pdr. shells for the most famous of all British field guns. The importance of this programme cannot be over-emphasized.

The Union has completed her share of anti-tank gun production and has also supplied large quantities of the special armour-piercing ammunition. Many thousands of filled hand-grenades are being delivered each day, and in a specially constructed plant the output of small arms ammunition is now very many times greater than at the outbreak of war. For this bomb,

shell and grenade programme, the Union's explosive and chemical industries are providing the high explosive. In fact, the Union's output of explosives during the war ranks as one of her best achievements and has been large enough to permit considerable export.

Many thousands of 3-inch mortars have been manufactured, and with them over 22,000 tons of mortar bombs. Land-mines exceed 2,200 tons, and nearly 1,400,000 steel helmets have been manufactured.

Over 5,700 armoured fighting vehicles were delivered and, in addition, 35,000 motor vehicles. Among the latter are 22 mobile dental vans, 10 mobile X-ray and medical laboratories, nearly 1,000 wireless vans, over 100 water treatment lorries (equipment for purifying water), over 200 mobile workshops and numbers of bridging trains which include pontoon carriers, jib-crane lorries, folding-boat lorries and lorries for carrying small box girder bridges. The tyre-making factories have turned out 60 different types of tyres to total nearly 1,000,000 for use by the armed forces. These include aircraft tyres and the giant tyres for special road-making equipment. In structural steel the fabricating yards in the Union have made component sections of a very large number of aeroplane hangars of different types, and two types of bridges. These are shipped in the flat to be erected on site. One of the bridges, the components of which are all manufactured in the Union, can be used as a single unit to bridge a narrow stream, or by construction on the Meccano principle can be used on the widest river. These bridges and hangars have entailed the use of 60,000 tons of steel.

Gun sights, mortar sights and optical instruments have also been made in considerable quantity, and a programme which concluded some time ago was the building of over 100 sets of special purpose radio equipment which was shipped in the form of complete stations. These have been doing excellent service in many theatres of the war, including the Pacific. This work was done by a selected group of highly skilled engineers and artisans

RECENT LABOUR LEGISLATION IN INDIA

By SIR FRANK NOYCE, K.C.S.I., C.B.E.

Member for Industries and Labour, Government of India,
1932-37

THE WORD "RECENT" IN THE TITLE OF MY PAPER IS ONE WHICH IS capable of elastic interpretation but, in the present instance, there is, fortunately, no difficulty in deciding on a convenient starting-point. For it is obviously unnecessary to go back beyond 1931, the year in which the Royal Commission presided over by the Rt. Hon. J. H. Whitley, issued its masterly Report "on the existing conditions of labour in industrial undertakings and plantations in British India, on the health, efficiency and standard of living of the workers and on the relations between employers and employed." The publication of that Report was followed by a spate of legislative activity in labour matters which has had no parallel in the history of Indian legislation. Except in 1937, every year from 1931 onwards until the inception of provincial autonomy saw a labour measure of first-class importance added to the statute book. In 1932, the system of recruitment to the tea estates in Assam was thoroughly overhauled; 1933 saw the extensive amendment of the Workmen's Compensation Act. In 1934, the Factories Act was entirely recast. Important amendments to the Mines Act followed in 1935. In 1936, new ground was broken by the Payment of Wages Act. I had hoped to continue the sequence with a revision of the Trades Disputes Act in 1937, but the Bill proved more controversial than any of the measures I have mentioned, and it was not until 1939 that it became law. The list of other labour measures, not all of them arising out of the recommendations of the Labour Commission, is a long one, and contributions to it were made by the Governments of Madras, Bombay, Bengal and the Central Provinces.

Those who know anything about the pressure, in present-day conditions, on the time of legislative bodies will realize that this could only have been accomplished as the result of cordial co-operation between the Government and all parties in the legislatures, co-operation all the more striking in view of the very inadequate representation of labour in the unreformed Chambers and evidence of the extent to which the social conscience of India has been aroused in recent years. And I, who had so much experience of his fighting qualities, can testify that labour's one direct representative in the Legislative Assembly, Mr. N. M. Joshi, was a host in himself.

Time does not permit me to say much about the background against which this legislation has been passed nor, in speaking to an audience such as this, is it very necessary that I should. But, should there be any among them who do not know India, I should perhaps mention that to the newcomer from Europe the outstanding features of the industrial life of that country are the predominance of three industries, the spinning and weaving of cotton and jute, and engineering and metal works; the importance of the seasonal factory, that is the factory concerned with the handling of crops such as cotton, jute, sugar cane, ground-nuts, tea, coffee and rubber, and is open for less than half the year; and the absence of a permanent factory population. The most striking element in the movement of labour in India is not the villager's willingness to leave his village to seek his fortune in the towns but his anxiety to get back to it. I should perhaps add that there are—or rather were, for the figures must have undergone rapid expansion in recent months—some 1,300,000 workers employed in the 5,000 perennial factories and some 300,000 in the 3,700 seasonal ones. Of those employed in the perennial factories, about half are to be found in two industrial centres, Calcutta and the Hooghly tract around it and Bombay, both city and island. I need hardly remind you that though both Calcutta and Bombay, as commercial centres and ports possess a variety of industries, one has made a speciality of jute and the other of cotton.

Pride of place among the six major measures I have enumerated may perhaps be given to the Factories Act, for it has been described as the most important labour measure yet enacted in India. Mr. Harold Butler, late Director of the International Labour Office, who visited India in the winter of 1937-38, expressed the view that the conditions prevailing in large-scale industry do not compare unfavourably with those in many European countries and that the regulation of working conditions in large factories is probably more advanced than in any other Asiatic country.

You will not, I am sure, expect me to give you a detailed description of the provisions of the various Acts. What you desire to know is in what main respects those of them which did not, like the Payment of Wages Act, break entirely new ground, represented an advance on the legislation they replaced. In legislation relating to factories and mines, the advance which invariably attracts most attention—though it is not necessarily of the greatest intrinsic importance—is a reduction in the hours of work. In accordance with the decisions of the International Labour Conference at Washington in 1919, the Factories Act of 1922 prescribed a working week of sixty hours with a daily limit of eleven hours. Every adult had to be given an interval of at least an hour, or two half-hours, a day, but this could be reduced to a single half hour if the working hours did not exceed eight and a half. A weekly holiday was obligatory and women were not allowed to work at night nor children for more than six hours a day. The Act of 1934 reduced the hours in perennial factories to fifty-four hours a week with a daily limit of ten hours. In seasonal factories, the hours remained the same for men, but have been reduced for women to ten. For children the hours in both cases were reduced to five. No adult may now work for longer than six hours without an interval of at least an hour, nor may his working day be spread over more than thirteen hours. The spread-over for children—a “child” is a young person over twelve and under fifteen years of age—is

seven and a half hours which, as also for women, must fall between 6 a.m. and 7 p.m., a provision which ensures them a full night's rest. An important and interesting feature of the 1934 Act was the introduction of a new class of employees known as "adolescents," young persons fifteen or sixteen years old. These can only be engaged as adults if they are medically certified as fit for employment as such. Otherwise, they can only be engaged on the conditions applying to children. Physical standards vary greatly from province to province and so Provincial Governments have been given power to lay down the standards to which children and adolescents must conform.

In such matters as the safety of factory buildings, precautions against fire, the adequate fencing of machinery, the supply of drinking water, the provision of latrines and the prevention of overcrowding, the Act of 1934 went much further than its predecessors. Typical of the advance made was the new provision imposing on the employer the obligation to take adequate measures to protect the workers from inhaling gas, dust and other impurities generated in the course of their work. The vexed and very technical question of temperature and humidification—matters of great concern in a tropical country—was dealt with by the adoption, as the true criterion of danger and discomfort, not of the degree of humidity or the actual temperature, but the cooling power, a factor dependent on the temperature, the humidity and the movement of the air.

Other provisions of the Act relating to welfare empower Local Governments to insist on the provision of *crèches* in factories where more than fifty women are employed, of adequate shelters for use during periods of rest where there are more than 150 workers, and of first-aid boxes under proper custody in the larger factories. An important new section gives powers to Local Governments to protect workers against various industrial hazards and to prohibit the employment of women and children in dangerous occupations such, for instance, as the manufacture of chemicals or explosives and certain glass-making, lead,

ceramic and cement processes. Finally, the penalties prescribed for offences relating to working hours and holidays and the employment of women, adolescents and children were substantially increased and a minimum penalty was prescribed for offences after the first.

The Act was amended in 1935 and 1936, but in each case only in respect of a single section. The amending Act of 1935 prohibited the employment of women at night, even in a supervisory capacity, thus bringing the law in India in line with the International Labour Conventions of 1919 and 1934. The amendment of 1936 gave Local Governments wider powers to bring workshops not using power within the operation of the main Act.

As in the case of the Factories Act, the Indian Mines (Amendment) Act of 1935 effected a substantial reduction in hours of work. Above ground, the Act followed the Factories Act in reducing hours from sixty to fifty-four per week. Below ground there is only a daily limit of nine hours, but this limit was applied to the relay (or shift) and not to the individual, with the result that, for the average worker, the time elapsing between his leaving the surface and his emerging to it again is nearer eight hours than nine, which period includes not only the hours of work but also the time spent in finding his way from the surface to the working place and from the working place back to the surface. The age limit for children was raised from thirteen to fifteen, and it was also provided, as in the Factories Act, that young persons fifteen and sixteen years old should not be employed below ground unless certified medically as fit for such work.

It will be noticed that I have said nothing about the women who used to form such a large proportion of the labour force employed underground in mines. The reason for this omission is that the Mines Act of 1928 had prohibited their employment in all mines except those in the principal coalfields and the salt mines in the Punjab, and had provided for an annual reduction in the exempted mines of the number of women so employed, in

such a way that by 1939 their employment would cease altogether. It proved possible to speed up the process of reduction and it was completed in 1936, two years earlier than the time appointed.¹

Of the other provisions of the 1935 Act, the only one I need mention is that which gives the workers two representatives on the Mining Boards established by the Act of 1901, the same number as that allotted to the employers.

Two further Mines Acts were passed in 1936 and 1937 to deal with the growing danger from explosions and the fires, largely due to wasteful methods of extraction leading to the collapse of pillars, which have turned large parts of the Jharia coalfield into a scene reminiscent of Dante's *Inferno* or of a European city immediately after it has had a shower of incendiary bombs dropped on it. These Acts give the Government of India power to promulgate temporary regulations relating to safety in mines without previous notice or publication, and enlarge both the field which can be covered by such regulations and the power of the inspectorate to issue safety orders applicable to individual mines. They also provide for the establishment of central rescue stations, for the setting up of rescue station committees and for the levy of a cess to finance them.²

The legislation relating to plantations—the Tea Districts Emigrant Labour Act of 1932—is of a specialized character, limited in application, and need not, therefore, detain us long. The necessity for it arose from the fact that the labour required for the main tea-producing part of India, the sparsely populated province of Assam, had always to be recruited from a distance; and the transfer of a constant stream of families, many of them drawn from aboriginal tribes, presented difficulties from the

¹ As the result of shortage of labour and anxiety as to the effect of a diminution in the output of coal on the war effort, the Government of India felt compelled as a temporary war measure, to exempt all coal mines from the application of the provisions of the Mines Act prohibiting the employment of women underground.

² A Mines Maternity Benefit Act was passed in 1941, the scope of which was considerably extended by an Amending Act passed at the last (1945) Session of the Central Legislature, mainly to meet the conditions arising out of the lifting of the ban on the underground employment of women in coal mines. This ban has recently been re-imposed.

outset. A long series of enactments, dating from 1863, had done much to eradicate the abuses consequent on the desire to secure the large rewards obtainable for supplying labour, but had not solved the problem of ensuring that the supply would be adequate. The Act of 1932 reduced the control of recruitment to the minimum necessary to prevent abuses and also contained provisions to safeguard the health of those recruited, to secure to all emigrants and their families a right of repatriation, which normally accrues after three years, and to punish offences.

Mention should be made here of the Indian Dock Labourers Act of 1934, under which an extensive code of regulations enforcing safety measures in docks and providing for the reporting of accidents, has been promulgated. The complicated question of hours of work on railways (except in railway workshops and railway collieries which come under the Factories and Mines Acts) is governed by an Act of 1930, and, therefore, falls outside the scope of my paper.

I now come to Acts of general application to industry. The most important of these are the Workmen's Compensation Act and the Payment of Wages Act. The first Workmen's Compensation Act was passed in 1928. Its scope was greatly enlarged by the Act of 1933, which not only widened the classes to which it applied, but added several new ones, notably workers on plantations and on ships of all nationalities within territorial waters. The Act has also been extended by notification to workers engaged in certain hazardous occupations, mainly those connected with forest work. It has been estimated that over six million workers come within the scope of the revised Act against the four millions covered by its predecessor. The scales of compensation payable for fatal injuries as well as for disablement were substantially increased, and provision was made to ensure that workmen and their dependants—the list of which was enlarged—should be made fully aware of their rights.

As I have said, the Payment of Wages Act broke entirely new ground in India and it is, therefore, worthy of somewhat

extended notice. In perennial factories and on the railways, the most usual method by which an employer endeavours to maintain discipline is by the imposition of fines. Although the total amount of such fines was never large, the system obviously lent itself to abuse, especially where, as in the cotton textile industry, it took the thoroughly objectionable form of compelling a weaver to take over any cloth from the loom which he had spoilt in the course of manufacture and deducting from his wages the wholesale selling price. The Act of 1935 was passed to regulate the system of fines and also to fix the periods for the payment of wages and to prevent delay in paying them. It applies to employees on pay of Rs. 200 or less *per mensem*, and in the first instance to factories and railways only, though it can be extended by notification to other industries. In accordance with the usual practice in India, the maximum wage period is one month. Payment must be made within seven days of the end of that period, but an employee who is discharged must be paid within two days. Payments in kind are prohibited, as are the fining of children and the recovery of fines by instalments. The maximum fine in any one month is limited to half an anna in the rupee of the worker's earnings. Fines may only be imposed for specified acts or omissions, and the sums received in fines must be spent on some object approved by competent authority which is beneficial to the employees as a whole. Deductions from wages for damage to goods or loss of money are specifically limited to cases in which the goods or money were entrusted to the employee in a fiduciary capacity, and the damage or loss was directly due to his neglect or default. With the approval of Government, deductions are also permitted for amenities provided by the employer but not for tools or raw material. An employer is permitted to recover up to eight days' wages where workmen absent themselves without reasonable cause, whilst an amending Act passed in 1937 enables employers to withhold pay from workers who, although present, unreasonably refuse to work. This, of course, was aimed at the "stay-in" strike—that

nuisance which India has only too faithfully copied from certain Western countries.

It is hardly surprising that the experience gained since the Act was passed has demonstrated once again how difficult it is to frame legislation which cannot be circumvented by those who set out with the intention of breaking it. Fining has almost completely disappeared, but its place has been taken, in many cases, by a system of forced leave without pay and by the introduction of differential wages for good, bad and indifferent work. It must regretfully be admitted that the Act already needs considerable tightening-up.

As all who are interested in the welfare of Indian labour know, indebtedness is one of the most important causes of the low standard of living of the Indian worker. The Labour Commission estimated that two-thirds of all industrial workers are in debt, most of them for a sum exceeding three months' wages. On those debts the rate of interest usually charged is one anna in the rupee per month or 75 per cent. per annum. Two legislative attempts to reduce this evil by reducing the worker's capacity to borrow have been made recently. The brief Act of 1936 which abolished imprisonment for debt except where recalcitrance or fraud was established was one which gave me special satisfaction. It was followed by another Act in 1937 which severely limited the possibilities of recovering debts through employers.

There are still a number of minor legislative measures which call for notice. The first of the Bills of which I found myself in charge after I became Industries Member in 1932, was one which prohibited the pledging in advance by their parents or guardians of the labour of young children, an evil which the Labour Commission had found especially prevalent in the Amritsar carpet workshops. In 1933, a short Act was passed enabling employers to acquire land not only for the housing of their employees but also for the provision of amenities connected with housing. The Trade Disputes Act of 1928 was amended in a minor respect in 1932, and, in 1934, its life—originally fixed at five years—was extended until a comprehensive Bill could be brought forward.

As for the Provinces during this period, Madras passed a Maternity Benefits Act and Bombay and the Central Provinces passed Acts extending the scope of their Maternity Acts. Bombay in 1934 passed a Trade Disputes Conciliation Act of which I shall have more to say presently; the Central Provinces an Act dealing with liquidation of the debts of industrial workers; Bengal and the Central Provinces Acts aimed at the harpies who wait with a big stick outside the factory gates on pay day to pounce on their debtors as they emerge; and the Central Provinces an Act to regulate factories which do not come under the operation of the Factories Act. To the last of these I shall have occasion again to refer.

Sufficient has, I hope, been said to show that the Central Government had provided the Provincial Governments with very solid foundations on which to build, when the introduction of provincial autonomy transferred to them the main responsibility for labour problems. The Provinces were not slow in setting wholeheartedly about the task of improving the lot of the industrial worker. Bombay made the pace with a comprehensive and far-reaching measure replacing its Trade Disputes Conciliation Act of 1934. There is no problem now confronting Indian industry of greater urgency and importance than that arising out of the relations between employers and employed. Unless war conditions have in recent months greatly altered the position for the better, it is hardly an exaggeration to say that scarcely a week passes without a strike somewhere in India. In 1938, the latest year for which I have figures, there were 399 disputes involving over 400,000 workers, the highest number of disputes till then recorded, though the number of workers involved was about a quarter of a million less than in the previous year. The total number of working days lost was, however, some 200,000 greater. The Trade Disputes Act of 1928 did little to improve matters for, though it contained provisions for setting up Courts of Inquiry and Boards of Conciliation, it did not compel resort to them and did not provide for a standing Industrial Court. It did, however, make lightning strikes in

public utility services illegal. The provisions of the Act which were aimed at general strikes proved in practice almost entirely nugatory. The amended Act passed in 1939 had, as I mentioned earlier, a distinctly stormy passage, in the course of which it lost its most important provision, that which laid down that the Government could declare illegal a strike involving, or likely to involve, serious and prolonged injury or hardship to the community or any section of it, or to employers or to workers generally or to any class of employers or workers, provided that a declaration of illegality was coupled with a reference of the dispute to a Court of Inquiry. Shorn of this provision, the Act did little more than give Local Governments power to appoint Conciliation Officers without making their appointment compulsory.

The Government of Bombay, which has had far more experience of trade disputes than any other in India, showed far less hesitation in dealing with this controversial question. Their Trade Disputes Act is a measure of great complexity and the limits of my time and your patience make it difficult for me to give you a brief and, at the same time, sufficiently full and clear account of its provisions. Its basic idea is to ensure, as far as possible, the redress of the grievances of industrial workers with as little delay as the circumstances of the case permit. For this purpose, the Act provides elaborate machinery, a Registrar of Unions, Conciliation Officers, headed by the Commissioner of Labour, who is *ex-officio* Chief Conciliator, Labour Officers, Boards of Conciliation, Arbitrators and, at their apex, an Industrial Court.

The first essential is to secure that the workers are adequately represented. There is no question of compelling them to join a trade union, but the progress of trade unionism should be greatly and healthily stimulated by the provision that where the majority of the employees affected by any change in the conditions of employment belong to a registered union or where some of them belong to a representative union, the conduct of all negotiations is left to the employers and that union. I will not

entangle you in the distinction that the Act draws between registered unions, representative unions and qualified unions.

The second step is to ensure that the workers have the fullest knowledge of their conditions of service. Employers have, therefore, to draw up standing orders setting out those conditions in respect of such matters as classification of employees, total weekly hours of work, wages, leave and holidays, termination of employment, suspension or dismissal from employment and means of redress. These orders have to be approved by the Commissioner of Labour and registered with the Registrar, but are subject to appeal to the Industrial Court. If a dispute arises and no agreement is reached, the Conciliation Officer steps in and does his best to bring about an agreement. If he fails, a Board of Conciliation, consisting of a Chairman and an equal number of representatives of employers and employees drawn from permanent panels, may be appointed. Conciliation proceedings may be replaced by arbitration proceedings if the parties agree. During the negotiations and conciliation or arbitration proceedings, lock-outs or strikes are illegal. A feature of the Act which is entirely new in India, and to which the Government of Bombay attach great importance, is the setting up of an Industrial Court, the members of which are Judges of the High Court or persons eligible for appointment as such. The Industrial Court acts as a voluntary court of arbitration and has very wide appellate and directing powers.

It cannot be said that the Act, which has so far only been extended to the textile industry,¹ has received more than a very chilly welcome from those it is intended to benefit, who apparently still attach an entirely fictitious value to the lightning strike which, as the Government of Bombay rightly held, has in practice rarely brought any benefit to the workers and has seldom resulted in anything more than an unnecessary loss of wages. Since the Act came into operation, extensive use has been

¹ It has since been extended to certain other industries in and around Bombay City.

made of its provisions. Every issue of the *Bombay Labour Gazette* contains a long record of the memoranda of settlements of disputes between employers and employed which have been reached with the help of the Conciliators and also of decisions of the Industrial Court. But the Act did not prevent a general strike in the Bombay textile industry which lasted from March 3rd to April 12th, 1940, although the dispute which arose out of the refusal of a dearness allowance had been referred to a Board of Conciliation whose recommendations had been accepted by the mill-owners.

The Government of Bombay followed up the Industrial Disputes Act with another first-class measure, an Act establishing a ten-hour day in shops, hotels, restaurants, and places of entertainment and a 220-hour month in commercial establishments. The employment of children under twelve or, where primary education is compulsory, under the school-leaving age is entirely prohibited and hours of work for young persons between the ages of 13 and 17 are limited to eight per day. For the present, the Act only applies to Bombay, Ahmedabad, Poona, Sholapur and Hubli.

Other Provincial Governments were not as quick in getting off the mark as Bombay, and, though some of the Provincial Ministries issued ambitious programmes of Labour Policy, little progress had been made in embodying their good intentions in legislation before the Congress Ministers resigned in 1939. The United Provinces and Bengal have passed Maternity Acts; that, so far as I have been able to ascertain, is all.¹

The Central Government, which, as I have mentioned, still retains concurrent powers of legislation in regard to labour matters, has not been idle since the introduction of Provincial autonomy. More important than the Trade Disputes Act in its truncated form has been the Employment of Children Act of 1938 as amended by a further Act of 1939. These Acts raise the minimum age for the employment of children in the transport of passengers, goods or mails or in the handling of goods at docks

¹ The Punjab passed a Maternity Benefit Act in 1943 and Assam in 1944.

from twelve to fifteen and, in so doing, go beyond the recommendations of the Labour Commission and the special article included in the Convention on the subject adopted by the International Labour Convention in 1937, both of which proposed a minimum age of fourteen. The Acts also prohibit the employment of children under twelve in an extensive range of occupations carried on in unregulated workshops. Among them are *bidi* (Indian cigarette) making, cloth and carpet weaving, and the manufacture of shellac explosives and fireworks, matches, soap and cement. There have also been an amending Act clearing up doubts and difficulties in the interpretation of the Payment of Wages Act and three Acts performing a similar service for the Workmen's Compensation Act, and also depriving employers of two lines of defence against claims which were available to them under the Common Law of England. An Act amending the Mines Act which was passed in 1939 was the outcome of the Report of the Coal Mining Committee appointed in 1937 to investigate the problems arising out of the numerous fires and accidents in the coalfields. It makes stowing (that is, the filling up of the space previously occupied by coal with sand, broken stone or alluvium) compulsory for safety purposes in coalfields other than those in Assam or the Punjab. It also provides for the establishment of a Coal Mines Stowing Fund, constituted from the proceeds of a small duty on coal and soft coke produced in British India or imported from a foreign country or an Indian State. The fund, which is administered by a Board of six members, is to be used to assist not only stowing operations but also other measures connected with safety.

I ought, I know, to say something about the progress of labour legislation in Indian States but, even if my information had been as full as I could have wished, time would not have permitted its inclusion. I can only say that most of the important States are following the example of British India and are taking steps to bring their labour code up to the British Indian standard. See postscript, Note 2.

And now for a few words in conclusion about the more obvious gaps which remain. I have advisedly said "the more obvious gaps," for experience at Geneva has shown how numerous are the crevices which have still to be filled in before the demands of "social justice," to use the phrase which reverberates through the Conference Hall when the Director's Report is under discussion, can be considered to have been adequately met even in the most advanced Western countries. When I left India in 1937, I felt that the biggest gap remaining was the regulation of the host of small workshops I have already mentioned in connection with the Employment of Children Act. The Labour Commission drew a lurid, but by no means exaggerated, picture of the conditions in which both adults and children work in these minor industries. The difficulties of the problem, one of them, of course, the necessity for a strong inspection staff, and the urgency of other labour legislation, have so far prevented the passage of an all-India Act, though considerable progress has, I believe, been made in consultation with Provincial Governments in deciding the lines on which such an Act should be drafted. But, even under existing legislation, much has been done to mitigate conditions which can only be described as deplorable. Local Governments now have power to extend parts of the Factories Act to any manufacturing establishment employing at least ten persons. Under the law as it stood prior to 1934, they could only apply the Act as a whole or do nothing at all.¹ The Bombay Government is the one which has taken the

¹ A "factory" is defined by the Act of 1934 as "any premises including the precincts thereof whereon twenty or more workers are working, or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is being carried on with the aid of power or is voluntarily so carried on." Amending Acts passed in 1940 and 1941 enable Local Governments to apply the provisions of the Act to any premises where a manufacturing process is carried on, with or without the use of power if ten or more persons are employed. Specified provisions of the Act can also be applied to "small factories," that is, factories employing ten or more but less than twenty workers, in which children under fifteen are working even if less than ten persons are employed, provided power is used. General enforcement of the provisions of these Acts would go far to close the gap mentioned above. But, in this connection, see the remarks in the Postscript, Note 1.

greatest advantage of this provision. No other has so far followed the example of the Central Provinces which, even before the introduction of Provincial autonomy, passed an Act designed to improve conditions of labour, especially for women and children, in the first instance in factories carrying on *bidi* making, shellac manufacture and leather tanning. A small but by no means unimportant part of this gap has, of course, been filled by the Employment of Children Act.

Judged by Western standards, two large gaps are those due to the absence of legislation in India dealing with sickness and unemployment insurance. From 1935 to 1937, the Government of India carried out an investigation into the possibility of sickness insurance legislation, but came regretfully to the conclusion that the task of collecting the statistical data essential for the establishment of a satisfactory scheme presented insuperable difficulties.¹ They thought—and Provincial Governments agreed with them—that the sounder method of proceeding was to build on the actual experience gained of the working of small schemes, but there the trouble was that there were only fourteen such schemes in operation throughout the whole of India. And there appeared no real demand for any experimental schemes on the part of Provincial Governments, of employers or, indeed, of workers, if the schemes involved any contribution from them. Much the same considerations apply to unemployment insurance. The Madras Government, in announcing its labour programme, stated that it proposed to tackle this difficult question by an enabling measure which would, in the first instance, be applied to the textile industry and would involve compulsory contributions from employers and employed. Its resignation put an end for the time being to progress with what would for India have been a novel and interesting experiment.

The Government of India have not infrequently been criticized

¹ An exhaustive Report on Health Insurance for Industrial Workers by Professor B. P. Adarkar, Officer on Special Duty, Labour Department, Government of India, and a Note on it by Messrs. M. Stack and R. Rao of the International Labour Office are at present under consideration by the Government of India.

for their failure to enact minimum wage legislation. On that subject, I cannot do better than quote that very able and entirely impartial observer, Mr. Harold Butler, who, in his report on his visit to India, expressed the view that "it is futile to suppose that minimum wages comparable to those ruling in Western Europe and North America could in the East be set by law and enforced by the State." He pointed out that "even if the difficulties arising out of evasion could be overcome, there is the still more fundamental consideration that the agricultural workers would be totally unable to buy the relatively high-priced goods so produced. In other words, industrial wages, and with them the living standard of industrial workers, cannot anywhere exceed rural levels by more than a small ratio; and the rural levels are depressed by population increase to a point where they afford only the barest subsistence." Mr. Butler's realistic contention applies equally to proposals for any further immediate general reduction in hours of work. It is impossible to escape the conclusion that unless wages are also reduced—a course that no one can desire to see followed—a general decrease in hours of work must inevitably increase costs of production and that "agricultural workers would be totally unable to buy the relatively high-priced goods so produced." In a country in which about nine-tenths of a population that the last census revealed to be in the neighbourhood of 400 millions are dependent on agriculture, the position of the agricultural worker must always be of even greater concern to the Government than that of the industrial worker.

I have almost completed my survey. I have dealt only with legislation, but it is obvious that legislation is, after all, nothing more than the expression of good intentions and that the extent to which it is translated into action must depend on the efficiency with which the laws are administered. It is, therefore, much to be hoped that, in spite of the financial difficulties from which no Province is free and which are not likely to decrease as the result of war conditions, the Provincial Governments will not hesitate

to spend money on a strong inspection staff. Without such a staff, both existing legislation and the additions that will undoubtedly be made once normal conditions are restored will merely cumber the statute book. The Central Provinces has endeavoured to meet this difficulty to some extent by enacting legislation imposing a fee—somewhat euphemistically termed a registration fee—of not more than Rs. 150 on all factories coming within the ambit of the Factories Act which are actually at work.

I would conclude with the earnest hope that the handicap on progress imposed by war conditions and by the political situation in India will soon be removed and that the Provincial Governments will then be able once more to co-operate with the Central Government in efforts to eradicate the four great evils which afflict the Indian worker, poverty, illiteracy, ill-health and insecurity.

NOTE 1

As some time has elapsed since this paper was read to the Royal Society of Arts, it has seemed desirable to add some footnotes and a brief postscript to bring it up to date.

The most important labour legislation of the war period has been the Factories Amendment Act of 1945, which will come into operation on January 1st, 1946. This applies to all provincial factories registered under the Factories Act, and its outstanding feature is the statutory enforcement of paid holidays for all factory workers. In 1936, the International Labour Conference adopted a Convention prescribing an annual paid holiday of six days for industrial workers. The Act goes considerably further than the Convention and enforces an annual paid holiday of ten days for adults and fourteen days for children. The holidays can be accumulated over a period of two years. Wages during holidays are to be calculated according to the definition in the Payment of Wages Act, half to be paid before the worker starts his holiday and the other half on his return. Another provision

ensures compensatory holidays to workers deprived of the weekly rest by an exemption from the provisions relating to weekly holidays of Section 35 of the Main Act.

Mention should also be made of the Weekly Holidays Act of 1942, which gives Local Governments power to prescribe one weekly holiday and a half holiday for employees in shops, theatres and restaurants, and of the Industrial Statistics Act of 1942 which enables them to collect statistics relating to any matter concerning factories or relating to welfare and conditions of labour. In an article on "Federation and Labour Legislation in India" in the *International Labour Review*, April-May, 1944, Sir Atul Chatterjee makes the important point that enabling legislation of this character, to which also belong the Factories Amendment Acts mentioned in the footnote on page 250, is of no greater value or authority than a Draft Convention of the International Labour Conference; the provinces are by no means bound to put them into force and no province can complain before the Federal Court that a neighbouring or competing province is neglecting to take any notice of the legislation.

NOTE 2

The following statement has recently (September, 1945) been published by the Director of Public Relations, Chamber of Princes, Council House, New Delhi:—

LABOUR CONDITIONS IN INDIAN STATES

Many Indian States have adopted effective measures to protect the rights and interests of labourers and to create congenial conditions of life for them. Labour laws touching almost every phase of industrial life have been passed and the requisite administrative machinery has been set up for the enforcement of those laws. Almost all the basic enactments regarding labour welfare passed in British India such as the Factories Act, Mines Act, Workmen's Compensation Act, Payment of Wages Act, Trade Unions Act, Trade Disputes Act, Trade Disputes Conciliation

Act and Maternity Benefit Act have been adapted in a number of Indian States. The more important States have also passed laws relating to shops and commercial establishments. Such legislation has resulted in improving morale, in raising standards of efficiency and skill, in putting a check on strikes and lock-outs, in establishing harmonious relations between employers and employees and in creating generally an atmosphere conducive to industrial peace.

Factory Legislation

States like Kolhapur, Patiala, Tonk, Jaora, Datia, Partabgarh, Cooch Behar, Junagadh, Nabha, Jind, Porbandar, Jhalawar, Tehri Garhwal, Faridkot, Barwani, Rajgarh, Cambay, Rajkot, Sunt, Mudhol, Wankaner and Sachin have passed Factories Acts or Rules safeguarding the interests of workers in the same manner as the more industrially advanced States have done. These Acts provide for the minimum age of children for admission into employment, maximum hours of work for men, women and children, including in some cases weekly holidays and rest intervals and safety and sanitation. Provision is also made in the Acts for inspection. Hyderabad, for instance, has set up a Special Section under the Labour Department dealing with the removal of refuse both from above and below ground in the collieries at Singareni, Tandur and Kothagudium. It is noteworthy that, during the last twenty-five years, no loss of life has been caused by any serious epidemic in these collieries. Cochin has enforced a series of regulations controlling conditions of workers on tea, coffee and rubber plantations. These regulations provide for free medical aid and free food during illness, anti-malaria measures during the malaria season, supply of rice of good quality at cost price, free maternity aid and food to all women labourers for a total period of seven weeks before and after childbirth. The Governments of Travancore, Bhopal, Jaipur, Jodhpur, Bikaner, Bahawalpur, Kotah, Dewas (Junior Branch), Patna and several other States have been evincing great

interest in the improvement of social conditions of workers. Hospitals, dispensaries and first-aid centres have been opened in industrial localities in many States to provide medical aid to patients.

Housing Facilities

For providing adequate and proper housing facilities to textile labourers in Indore, millowners have co-operated with the Government by setting aside a percentage of their profits for the construction of tenements. Baroda and Mysore have organized co-operative Housing Societies for improving housing conditions. Model Labour Recreation Centres have been started in the working-class area in Bangalore. Indoor games, reading-rooms and libraries have been provided at these centres. Adult Literacy Classes are also conducted at these places. To inculcate the habits of thrift and saving, co-operative credit societies have been established in the industrial establishments of many States.

Until recently many parents, under the stress of poverty, sent their children of tender age to factories. To combat this evil the Gwalior State passed the Pledging of Children's Labour Act and the Employment of Children Act prohibiting employment of children in factories. Similar Acts have been passed in Hyderabad, Mysore, Travancore, Jaipur, Cochin, Korea and many other States. A child has been defined to be any person under 14 in Indore and Travancore and under 12 in Hyderabad. The Mysore Regulation prohibits even adolescents between the ages of 15 and 17 from working in factories unless they produce certificates of age and physical fitness. Factory owners are not allowed to employ children and women in hazardous occupations. In some States, factories employing fifty women or more have to reserve a suitable room for the use of their children.

Protection of Wages

To remove the element of insecurity against non-payment or delayed payment of wages, Hyderabad, Baroda, Mysore,

Gwalior, Travancore, Indore, Cochin, Rampur, Korea, Suket, Dharampur and many other States have passed the Payment of Wages Act fixing a time-limit before which all wages due to workers must be paid. It lays down that no wage period should exceed one month and all wages should be paid in cash and on working days. The Act prohibits factory owners from imposing a fine on a labourer except for prescribed and notified acts and omissions, and that too after giving the labourer full opportunity to clarify his position. Hyderabad, Mysore and Indore have enforced the Attachment of Wages Regulation and Imprisonment for Debt Regulations for providing relief to workers from indebtedness. The standardization of wages was secured in the cotton textile mills in Indore in 1942 and labour has been decasualized by the introduction of the *Badli* control system on the lines adopted by the Bombay Millowners' Association.

Social Insurance

Two important measures adopted by Indian States in respect of social insurance are the Workmen's Compensation Act and the Maternity Benefit Act. The former legislation was passed by Manipur and Bundi in 1923, by Baroda in 1929, by Rampur in 1942, and by Pudukkottai in 1943. Hyderabad, Mysore, Travancore, Indore, Jaipur, Cochin, Bharatpur, Cooch Behar, Bhavnagar, Porbandar, Nabha and several other States have enforced similar rules. Gwalior, Barwani and Korea have passed the Employer's Liability Act. Under the Workmen's Compensation Act, workers or their dependants are entitled to compensation in case of any accident or industrial disease contracted or injury received resulting in temporary or permanent disablement or death.

The Maternity Benefit Act has been passed in Hyderabad, Baroda, Gwalior, Mysore, Indore, Cochin, Bhavnagar and many other States. The Act applies to all women working in factories. The maximum period of benefit available under this Act varies in different States, but it is usually eight weeks.

Trade Unions

Legislation encouraging the growth of Trade Unions has been enacted in Hyderabad, Kashmir, Mysore, Baroda, Gwalior, Indore, Travancore, Jaipur, Cochin, Rampur, and Porbandar. Cochin passed the Trade Union Regulations in 1936, Travancore in 1937, Baroda in 1938, and Rampur in 1942. These measures grant protection to all officers and members of registered unions against any civil or criminal proceedings in respect of any activities for the furtherance of trade unions and trade interests. H.E.H. the Nizam's Government has recently enforced the Trade Unions Act which, among other things, makes provision for permitting outsiders to be office-bearers of a Union. It lays down that the general funds of a registered Trade Union must be spent only on legitimate activities of the Union, while a separate political fund may be raised for furthering political activities of the members of the Union.

Indore appointed a committee in 1932 to submit an exhaustive report on industrial disputes. The State is to-day actively following the policy and suggestions made by the Committee. Cochin passed the Trade Disputes Act in 1933, Indore in 1937, and Rampur in 1942. Some other States where this Act has now been enforced are Hyderabad, Gwalior, Baroda, Kashmir, Jaipur and Bhavnagar. In Indore these measures provide for the appointment of a Conciliation Officer and a Board of Arbitration. Cochin has set up a Court of Enquiry and a Board of Conciliation for the settlement of all major industrial disputes. Mysore has a Court of Arbitration with a Judge of the High Court as its Chairman and two members for carrying out similar duties. Bhopal and Cochin have appointed Labour Commissioners to act in liaison between labour and the State Governments.

Hyderabad has set up a Statutory Labour Advisory Committee on which labourers and factory owners have been granted equal representation. The Committee advises the Government on all matters concerning the position and well-being of workers. Another Committee recently appointed by H.E.H. the Nizam

of Hyderabad is the Labour Investigation Committee, which collects data relating to wages, employment, housing, social conditions of labour and other matters and submits reports for consideration and formulation of new policies by the Government. The Committee exercises the powers of a Civil Court for summoning witnesses and recording their evidence for the collection of correct data. Cochin has an Employment Exchange to help unemployed and demobilized persons to find suitable jobs. Mysore has established a Labour Welfare Board consisting of the representatives of employees, local bodies and the general public for advising the Government on measures to be adopted for the welfare of workers.

Abolition of Forced Labour

Stringent measures have been adopted in many States to uproot the evil of forced labour or *begar*. Several States have opened offices attached to their Labour Department for the effective abolition of this abuse from their territories. H.E.H. the Nizam of Hyderabad issued a *Firman* in 1922 prohibiting forced labour. These orders were displayed in all villages and read out to the public. Violation of these orders is severely punished. Jodhpur abolished forced labour as early as 1914, and enforced the Marwar Supplies, Transport and Labour Rules fixing the scale of payment of wages for various kinds of services rendered by an employee. Banswara passed Begar Rules in 1904 and Datia passed the Forced Labour Act in 1937. Dewas (Junior Branch) issued a special notification in March, 1939, prohibiting forced or compulsory labour even on the basis of payment. Bundi, Dungarpur, Rajgarh and several other States have enforced similar rules in their territories.

PARTNERSHIP IN NIGERIA

By SIR BERNARD BOURDILLON, G.C.M.G., K.B.E.

Governor and Commander-in-Chief, Nigeria, 1935-43

I AM NOT SURE WHO IT WAS, THOUGH I RATHER THINK THAT IT was Lord Hailey, who first suggested that the time had come to use the term "Partnership" rather than "Trusteeship" to describe our relations with colonial peoples. Whoever it was, the idea has been generally adopted, and most recent utterances of importance on colonial matters have contained a reference to the new slogan. The change is a welcome one, not only because the new term is more accurate, but also because the old one had to a great extent lost its appeal to the colonial peoples themselves, who were beginning to suspect that we were using it to emphasize their immaturity, rather than our own responsibilities. But it would be unfortunate if the introduction of a new slogan were held necessarily to connote the introduction of a new policy.

From the economic point of view there is a new policy to fit the new slogan; the Colonial Development and Welfare Act of 1940, by discarding once for all the old doctrine of individual self-sufficiency, under which a colony could only have the services which it could pay for out of its own resources, accepted the sharing of financial responsibility which partnership implies. Official utterances have done scant justice to the radical nature of the change of policy involved, possibly owing to a natural reluctance fully to admit the inadequacy of the old policy, but it is a definite change, and not merely a development.

While, however, an examination of the means for implementing the new policy of economic partnership brings into prominence the practical justifications, indeed the urgent necessity, for

a policy of political partnership it would be unfortunate if the idea that such a policy were a new one were to be widely held. Unfortunate, not only because it would be unjust to the large body of colonial officials who have been practising it with enthusiasm for many years, but also because it might encourage hopes for political changes of a more dramatic nature than the circumstances either necessitate or warrant.

I have judged this preamble necessary because I wish to deal with partnership in Nigeria chiefly from the political point of view, and I want to make it quite clear from the outset that I shall be dealing with the present practice and future development of an existing policy, and not with any proposals for the introduction of a new one.

That policy is, of course, the education of the people in the management of their own affairs, with responsible self-government as the final goal; and it is my conviction that circumstances in Nigeria are such that we may reasonably hope that progress towards our goal may be accompanied by considerably less friction than we have experienced in other parts of the Empire. I base this conviction on the opinion that the system of governing through the medium of Native Authorities, the system usually known as "Indirect Rule," provides an excellent training in the art of government, and, owing to its extreme elasticity, permits the handing over of authority to proceed gradually and almost imperceptibly, and not, as usual, by a series of overt steps, each step being accompanied by a certain amount of friction and bickering.

Before I go any further I had better give a very brief description of the system, for the benefit of those of you who know it by name and no more. Put as shortly as possible, it is this: local administration, throughout the whole country with the exception of a few large towns, is in the hands of bodies known as "Native Authorities," who are entrusted with the duties of maintaining law and order, collecting the direct tax, road upkeep and other services (including in some cases the maintenance of schools, hospitals, veterinary clinics and so on), and administer their

own funds, which consist of an allotted portion of the tax they collect, and certain minor dues. Associated with them are Native Courts who deal with the great mass of petty civil and criminal work throughout the country. These authorities vary greatly in constitution and size, at one end of the scale being an Emir with two million subjects, at the other a village council. They all derive their authority from the same law, but their actual powers vary greatly, both quantitatively and qualitatively. The former, in that the more capable they are the more they are given to do, functions which are the responsibility of the central government in the more backward areas being handed over to the Native Authorities in the more advanced, and the latter in that the guidance of the British administrative officer (for such is his function) may amount to practically direct control or may be confined to consultation and advice.

Now I suggest that the best way to test the validity of my opinion as to the merits of the system is to ask certain questions about it.

The first question that I would suggest is:

"Is the power of the Native Authorities real, or are they mere shams, only allowed to do what the British officials want them to do?"

The answer is (as I have just indicated), that while their statutory authority is always the same, the actual authority that they wield varies according to their capacity, the practice being to allot them responsibilities in excess of their capacity rather than the reverse, and to allow them to learn by their own mistakes. The declared policy is to give the Native Authorities the maximum degree of responsibility that is compatible with good government. Let me give you an instance of the practice in the case of the less advanced authorities. In certain villages in the Eastern provinces sanitary conditions were pretty rudimentary, and it was desired to improve them. The Native Authority, in this case a Clan council, was asked if they would like to appoint (and of course to pay for) a sanitary inspector. After due deliberation back came the following reply: "We of

the bushes have aboded in the dirt from the beginning, and our vacosities have become so strong that the dirt has no power to harm us. No sanitary inspectors needed in this area." The word "vacosities" puzzled me for a long time, until it occurred to me that they had got hold of a dispensary attendant to help them draft their reply, and that the word was really "phagocytes"! The point of the story is that they did not have a sanitary inspector forced on them.

I have chosen this rather trivial example of the freedom of action, or, perhaps I should say, in this case, inaction, enjoyed by even the least developed Native Authorities, because it leads naturally to the next question:

"Are the Native Authorities efficient instruments of government, and in particular, will they be efficient instruments for the greatly accelerated programme of social and economic development which may now be expected?"

From one point of view the answer is an immediate and unhesitating affirmative. For the outstanding merit of the system is that it secures, better than any other, the co-operation of the people themselves, without which effective government action of any kind, and, in particular, the effective operation of social, and economic schemes, is impossible. I can give you two very definite proofs of this statement. My predecessor, Sir Donald Cameron, was thoroughly dissatisfied with the form of administration which he found in the Eastern provinces. The so-called Native Authorities there were mere copies of parts of the Northern provinces model, and were in no sense "native" to the Eastern provinces. The result had been considerable discontent, and in particular very strong opposition to the introduction of the direct tax. He accordingly instituted searching enquiries into the social structure of the local tribes, and bodies were evolved which fitted more or less closely into this structure, if they were not, as they often were, already part of it. The results were in some respects amazing. Not only was the tax collected with infinitely less difficulty, but when the people as a

whole realized that they were having a say in the spending of their own money on their own needs, suggestions for raising the rate of tax were not only received with surprisingly little opposition, but in some cases actually emanated from the Native Authorities themselves.

Shortly after my arrival in Nigeria I made a tour of the Colony districts. The Colony, as opposed to the Protectorate, is the area along the coast for a short distance to the east and west of Lagos. Here the indirect rule system prevalent in the Protectorate had not been applied, and there were no native administrations. I found an apathetic people in a very backward condition, doing nothing to help themselves, and with a lack of enthusiasm for any kind of progress, which was in marked contrast to the spirit of their immediate neighbours. The idea of starting native administrators in the Colony had been examined, but hitherto without result. I revived the enquiries, and after a good deal of discussion and some disappointments Native Authorities were established. Another tour of the Colony a year or two later revealed an amazing change for the better. Live communities keenly interested in the expenditure of their own funds, and with a real parochial pride, had replaced the old apathy, not without a good deal of friction at times, but on the whole friction of a healthy nature. Badagri, near the Dahomey border, which I had found on my first visit a slovenly discontented village, regretful of the glories of slave-trading days, was a clean and tidy place with a very energetic council, and thoroughly pleased with itself. On the occasion of my first visit they had complained bitterly at the failure of the government to provide them with a motor road connection with the hinterland. I had suggested that if they wanted it very badly they might do something themselves about an embankment across the two-mile swamp which was the first obstacle. Two years after they had got their own Native Authority I got a message to say that they had done a mile of the embankment, and, please, could they have a thousand Italian prisoners of war to finish it!

The delight of one small district in the Colony in getting control of their own affairs was expressed in terms so vigorous that I cannot resist repeating them to you. "You," their address said, "have done what other Governors failed to do. Saul has slain his thousands, but David his tens of thousands. Henceforth our doubts and fears lie buried beneath the sable heart of the dirt of centuries."

Exactly what they meant I cannot fathom; but it is apparent that they were pleased!

But although it is of the first importance that the local instrument of government should have the confidence of the people and secure their co-operation, this popularity by itself is not enough. It must also be an efficient piece of machinery. How far do the native administrations fill the bill in this respect? The answer cannot be a simple one; we must, I fear, examine the different types of native administration. Fortunately, though their size, character and quality vary enormously, they can, for most purposes, be divided into three main classes, which correspond roughly to the three administrative divisions of the Protectorate, the Northern, Western and Eastern provinces. Those in the Colony approximate to the Western provinces type. Of the Northern provinces type it may be said at once that it is thoroughly well constructed, and, provided that each component part of the machine does its job, well designed to carry out any policy the execution of which may be entrusted to it. The head of the administration is the Emir. He has a council, appointed by himself (or, of course, his predecessor), some of the members of which hold definite "portfolios." He has under him what amounts almost to a regular civil service in the shape of a hierarchy of district and village heads, who also are appointed by him and responsible to him. Here we obviously have all the makings of an efficient machine; added to which we have a population predominantly Moslem, with the traditional Moslem respect for authority.

The Western provinces machine is, at first sight, very similar.

We have the Oba, or King, again with his council; each village has its chief, usually called a Bale, and some of the towns or larger villages have more important chiefs, intermediate between the Oba and the Bale. But there are two vital differences. The first is that these subordinate chiefs are not appointed by the Oba. They are either hereditary in some form, or selected, either by the people or by some traditional body whose powers and procedure are well recognized. I think that I am right in saying that in the whole of the Western provinces there is not a single subordinate chief who is appointed by the Oba himself. The second difference is in the character of the people. The last failing of which a Yoruba can be accused is that of undue subservience to authority! I do not mean to say that they are by nature truculent or intractable—indeed, they are a very reasonable folk—but the democratic spirit is strong among them, and they have not that reserve and taciturnity which is such a common product of the fatalism of Islam. If the Yoruba has a grievance he lets you know all about it, an advantage in many ways, for impending trouble can often be foreseen and tackled before it matures. Given a wise ruler with a good council, the Western provinces native authority is capable of functioning admirably, with very little guidance, as has been amply proved during the man-power shortage of the war, but from the point of view of mechanical perfection it does not come up to the Northern provinces machine.

When we turn to the Eastern provinces we have a very different kettle of fish. "Kettle" is the *mot juste*, for council meetings in the Eastern provinces always seem on the point of boiling over—and frequently do so. The outstanding feature of the social structure of most of the Eastern provinces is intense individualism. There are no chiefs. The biggest man is the head of the family, and the organization is conciliar, with all members of the council equal. The council may represent a village, a group of villages, or a clan; tribal councils are a dream of a still distant future. A permanent chairman of a council is unthinkable—

chairmanship must go by rotation. It is almost equally unthinkable that the family heads of a village (who all sit on the village council), should choose permanent representatives for the group council; the normal expedient is to divide the whole lot into panels which attend in rotation. Obviously a native authority of this nature, whatever advantages it may have, is not an efficient administrative machine. Indeed, the title "native authority" is a bit of a misnomer. Such a body may well be capable of expressing the wishes of the people—it is not quite so good at seeing that those wishes are carried out. It may, for example, with limited funds to spend on road construction, make an excellent choice as to which of three or four possible roads should be built. But it is not capable of seeing that the work is properly done. And so the British administrative officer in the Eastern provinces has, at present, to do much more in the way of issuing direct orders and exercising direct supervision than his brother in the Northern or Western provinces.

It may be that the increase in governmental activities which economic partnership will render possible will necessitate a radical change in the form of administrative partnership in the Eastern provinces; but I am not unhopeful that the genius of the people themselves may help to evolve something more effective out of the present machine, and one or two possible lines of development are already beginning to appear.

The third question which I would like to suggest to you is this:

"How far do the Native Authorities, as now constituted, represent all shades of public opinion and all legitimate interests?"

There is a tendency, among the critics of the system, to describe the Native Authorities as "museum pieces," and to accuse the government of Nigeria of attaching much too much importance to ancient tradition and tribal custom. A recent article in *The Economist*, for example, contained the following:

"The principle that progress should be based on indigenous cultures and customs, has often given way to the practice of

keeping indigenous forces in being, even though through them the people cannot progress. This has had the effect not only of keeping the people more backward than they might have been, but of creating discontent among the more advanced Africans, who might otherwise have become their society's leaders."

I cannot accept this as a correct statement of fact. It may be that on some occasions anthropological enthusiasm has been a bit too strong and affection for the traditional has outweighed more practical considerations, but the maintenance of traditional forms has never been regarded as an end in itself. I should like to quote to you from a memorandum which I wrote in 1939. I quoted Sir Donald Cameron as having laid down that, in constituting or remodelling Native Authorities we were to "seek the authority which, according to tribal tradition and usage, has, in the past, regulated the affairs of each unit of native society and which the people of to-day are willing to recognize and obey," and I went on: "In other words there were to be two criteria—the authority must be traditional and it must be acceptable." There was no question, I said, that Sir Donald Cameron had regarded the second of these two criteria as the most important, and so, most emphatically, did I; indeed, I would go further and say that acceptability was the only real criterion, and that conformity to tradition is merely a means (though in conservative Africa a very important and effective one), of securing acceptability. "If," I added, "the people themselves really wish to abandon a traditional organization, or to remodel it, there is no reason on earth why it should not be abandoned or remodelled. Native Authorities are not museum pieces, to be carefully preserved in their original condition. Nor, on the other hand, must they be soulless machines, invented by an alien constitution-monger. The Native Authority must, in short, be neither a fossil nor an artificial machine, but a living and active organism, and it can only be that if it is founded on the will of the people."

Having established this principle, it still remains to ask whether the traditional type of authority which is acceptable does, as

The Economist suggests, often create discontent among the more advanced members of the community. Now it is a fact, that at one time the whole system was viewed by the more advanced members of the community with a certain amount of suspicion. My predecessor's suggestion to introduce it into the Colony was solidly opposed by the African unofficals in the Legislative Council. It is significant that eleven years later the same suggestion was as solidly supported by them. But, though the system itself is now generally approved by the younger and more progressive elements, it is inevitable that they should be critical of its operation, and the risk of antagonism between them and the older and more conservative element, who, for the most part, constitute the Native Authorities, obviously exists. I am happy to say that such antagonism is much less than might have been expected, and that there is a real and conscious determination on the part of the two parties concerned to avoid it. The position is least satisfactory in the Northern provinces, where education has not taken so strong a hold as elsewhere and the advanced element is numerically weak, and where also the tradition of unquestioning submission to authority is strong. Here a definite move by the Emirs to encourage the younger and better educated men to express their views is necessary. Without such encouragement there is a danger that discontent may breed in secret. In the Western provinces the strong spirit of democracy and the activities of the Youth Movement and a number of tribal progressive societies are very effective in making the older folk and the privileged classes aware of the necessity for moving with the times, and measures are devised for securing a share in the conduct of affairs for the more advanced element. Various devices are adopted, such as the co-opting on to councils of young educated men with no traditional right to a seat, or the formation of sub-committees with some non-council members on them to deal with matters like education, health, and so on. The great merit of these devices is that they are spontaneous and emanate from the people themselves, and are clear indication

not only of an awareness of the risk of antagonism, but of a genuine desire on both sides to avoid it. In the Eastern provinces there is a considerable number of "District Unions," which have sprung up without any official inspiration and have no official position but which are on good terms with the councils and have considerable influence with them. The idea of sub-committees of the councils is beginning to take root here too.

I have so far been dealing with political partnership on the administrative level, that is to say, partnership in carrying out policy the general lines of which have been decided by higher authority. I hope that I have succeeded in convincing you that on this lower level partnership in Nigeria has a very real meaning, and that in the day-to-day work of the government, the people themselves are playing a major part. I should now like to take you up to the top floor and consider to what extent the policy of partnership is being practised there. What share, in other words, has the Nigerian himself in directing major policy?

Now in a Crown Colony the direction of policy is, as you know, in the hands of the Governor alone, subject to the supervision and control of the Secretary of State. There is no one in the Colony with whom he shares that responsibility and there is no body in the Colony to which he is responsible. Between this form of government and responsible self-government there is no half-way house. The transition from one to the other involves a definite and abrupt step, and it seems to me that a good many of the mistakes we have made in the past have been due to our failure to recognize this fact, and to our efforts to provide a half-way house, or at any rate to persuade the people with whom we were dealing that we were doing so. Responsible self-government may be subject to limitations and safeguards, or may (as in dyarchical systems) be restricted to certain spheres of governmental activity, but there can be no gradual transition from a Governor responsible to the Crown to a government responsible to the people of the country. There can and must be gradual preparation for the change-over, but there can be no

gradual change-over. And so, when we are examining how far partnership at the top level has gone in Nigeria we are not considering how far the people of the country share the responsibility of the Governor, but how far they share, with the alien bureaucrats, the duty of advising him in the exercise of that responsibility.

The Governor gets his advice from three sources, from his executive council, from his legislative council, and from his heads of departments and other senior officials individually. Let us begin with the last.

There are at present in Nigeria no African heads of departments, nor are there many African officers yet sufficiently high in the service to exercise much influence on the advice which heads of departments will give to the Governor. The remedy for this is merely a matter of time, as there is no post in the service from which an African would be barred on account of his race.

The legislative council has twenty-eight official members and nineteen unofficials, of whom six are Europeans. Of the officials only sufficient attend, as a rule, to give a bare majority over the unofficials. The Governor can put through any measure that he wishes by the use of the official majority. In actual practice, however, that majority is never used, and it has been the practice of recent years to allow the official members a free vote on most occasions. The influence of African members on the passage of a Bill is therefore really important, and they are responsible for many amendments. But their real influence is in the finance committee. This consists of the unofficial members only, except for the chief secretary and financial secretary, who are chairman and vice-chairman respectively. This body scrutinizes the annual estimates and reports on them to the council and all supplementary estimates have to be approved by it before being put to the council for formal approval. The important fact emerges (and its importance is not sufficiently realized in Nigeria itself), that not a farthing of the taxpayer's money can normally be expended without the prior approval of a body, which has a

large majority of African members. It is true that the Governor can issue a special warrant, or can, by the use of the official vote, force through the council a vote which the finance committee have not recommended. I never used either of these powers and I doubt if my predecessor did. Other measures such as an alteration of customs or excise duties are usually referred to in the finance committee, the members of which also, during their review of the estimates, have a chance of which they are not slow to avail themselves of criticizing departmental policy and administration. Altogether it will be seen that, through the medium of the legislative council, the Nigerian has great scope for sharing with the European official the task of advising the Governor as to the exercise of his responsibilities. As to how far the African members of the council are fully representative of the country, as a whole, I propose to say no more than that the whole question is under examination, the Northern provinces having at present no African representation.

Remains the executive council, upon which there have been for the last year or more three unofficial members, two of them Africans. The importance of the step of appointing unofficials to this body received insufficient notice locally, chiefly because those Africans appointed were not of the same political colour as the Press, but it was a real step forward, unofficial Africans now for the first time being in the inner councils of the Governor, and having not only the right, but the duty of advising him in matters of the highest importance.

To return for the moment to the administrative level, strictly urban administration is also on a partnership basis. Many of the larger towns are actually administered either by the Native Authority or by a special committee of that body. A few, which are not the headquarters of a Native Authority, are administered by a British official with the aid of a township advisory board. Lagos itself has had a town council under a British official chairman, with official members appointed by the Governor and elected unofficials. Till recently the latter have been in a minority,

but for about two years the numbers have been equal, the chairman having a casting vote. A recent necessity for raising the rates gave me an opportunity for testing the sense of responsibility of the unofficials. I was well aware that they were at heart in favour of the increase, but did not feel quite sure that, if the decision lay with them, they would face the unpopularity attendant on a right decision, so I asked the chairman to arrange for one or two official members to be absent from the crucial meeting. The result was most satisfactory, the unofficials shouldering the responsibility of a quite considerable increase. They are now to have an unofficial majority with considerably increased powers, subject to the right of the Governor to displace them temporarily by a commission, if things go really wrong.

I hope that I have been able to convince you that at the administrative level partnership is very real, and that the powers of the junior partner can be and are being increased *pari passu* with his increasing capacity. On the higher level there is room for more Africans in higher posts, a development which will come naturally in due course. In due course also an increase in unofficial representation on the executive council may be expected. The legislative council has outgrown its present shape, and reforms are being considered at the moment. In connection with these reforms I should like to call attention to the necessity for a closer connection between the Native Authorities and the central legislature. Very many of the former have by now thoroughly proved their capacity, and it is high time that they began to take a greater interest, and have a bigger voice in the affairs of the central government. The time has not yet come, and will not come just yet, when the Nigerian peasant will be capable of electing his own representatives to the legislature, and the present unofficial members, whether elected or nominated, do not really sufficiently represent the peasant class. The professional, salaried and trading classes are amply represented, but not the primary producer. The Native Authorities are, however, fully alive to his interests, and can be trusted to look after them

if they are fully represented in the legislature. Doubt has occasionally been expressed as to whether the Native Authority system is compatible with self-government at the centre. I do not share those doubts. If an alien bureaucracy can govern through the medium of indigenous institutions I can see no reason why a native central government should not do the same. The suggestion, sometimes put forward, that the eventual government may be a federation of Native Authorities, is based on an entirely wrong view of the real position of these Authorities, but, so long as we do not insist on the eventual constitution conforming too closely to our own model, I see no reason why Native Authorities should not be an integral part of a representative government.

NOTE

Since this paper was read a most important step towards the attainment of the object mentioned in the last sentence thereof has been taken in Nigeria. Proposals for the revision of the constitution have been made by the Governor, approved in principle by the Secretary of State, and unanimously endorsed by the Nigerian Legislative Council. These proposals involve the addition, to a completely reconstituted legislature, of a large number of members selected by Native Authorities from their own members. The object of the reform is, in the main, to solve the very difficult problem of securing broad-based representation in a country not yet ripe for the ballot box. But it will also have the exceedingly important effect of associating the Native Authorities directly with the financial and legislative activities of the central government. It is an experiment of the first importance which may well provide the solution for several of the difficulties hitherto experienced in securing rapid and at the same time democratic progress in countries where the educated minority are so far in advance of the great mass of their fellow-citizens.

EDUCATIONAL PROBLEMS OF EAST AND WEST AFRICA

By THE REV. H. M. GRACE

Educationist, Uganda, 1914-34; Principal, Achimota College, Gold Coast, 1935-40

THE TERRITORIES UNDER SURVEY ARE, ON THE WEST, NIGERIA, THE Gold Coast, Sierra Leone and the Gambia; and on the east, Uganda, Kenya and Tanganyika.

In a rapid comparison of the countries on these two coasts of central tropical Africa it should be noted that on the east the boundaries of the three territories march together, while, on the west, the countries are all separated by French territory. On the east you have the splendid highlands of Kenya, with their smaller counterpart in Tanganyika, and the three mountainous areas of Uganda, and, except on the low coast plain and in the valleys of some of the larger rivers, these countries are, generally speaking, high and comparatively healthy. On the west you have no good, high and healthy country—perhaps the nearest approach is in the neighbourhood of Jos in Nigeria—and the escarpments which run up to 3,000 feet in the Gold Coast cannot be compared with the glorious high countries in the east. It would be true to say that all the lands around the Gulf of Guinea are unhealthy, even in comparison with the steamy heat of Malaya, though the harmattan may bring a little relief for two or three months of the year to some. You would therefore expect that the people would be much less virile on the west than on the east, but that does not seem to be the case. Perhaps the West African, by reason of his steaming forests which encourage a more sedentary life, gets more corpulent as the years pass by, but in vigour and strength there is little to choose

between East and West Africans. Again, you might expect the high altitudes on the east to affect the sensitivity and nerves of the native; and while the Kikuyu or the Nandi are probably more highly strung than the average Bantu or Negro, yet they are no more nervous in temperament than the Ashanti on the west. There is no inherent difference between the tribes on the east and those on the west, though there are considerable variations taking tribe by tribe whether in east or west. The Hausa is as different from the Ga on the west as the Teso is from the Muhima on the east.

Education began with, and was sustained almost entirely by, the missionaries until fifteen to twenty years ago. The work grew to such proportions that there was a general desire, not least on the part of the missionaries themselves, for Government guidance and subsidy. The two Commissions, one to the west and one to the east, of the Phelps Stokes Foundation of the U.S.A. in 1921 and 1924, provided great stimulus and guidance for this whole educational movement, and with the appointment of Directors of Education in the various countries, and the setting up of the Advisory Committee on Education in the Colonies to the Secretary of State, the stage was set for an even greater advance. At the present time the Government directs and controls education in all these countries, subsidizing and inspecting the schools of the Church, which still comprise over 90 per cent. of all the schools in these great areas; the Government schools are very largely those for Mahommedans, higher colleges and vocational institutions. In some small areas where the missionaries had not developed an educational system, the Government is establishing Native Administration schools. I hope that in the future most of the primary schools in these great areas may tend more and more to become Native Administration schools, working in close co-operation with the Church.

There is a growing healthy co-operation between the Government, the Church and the Native State; all three estates are necessary (in Mahommedan areas the place of the Christian

Church is taken by the Mahommedan religion) for any progressive scheme and plan of education in these African territories; though, naturally, provision must be made for that minority which will desire a materialistic, humanistic or purely scientific education without religion. This minority will not be large, as the African, generally speaking, is incorrigibly religious, and is accepting Christianity in place of many of his animistic beliefs, which cannot survive the scientific spirit of the age.

There has been an amazing development of education which began in earnest about eighty years ago on the West Coast, and some sixty or so, on the East, with a growing crescendo during the last ten or fifteen years; and there is promise of an even greater expansion and strengthening when the Government's social development schemes are fully worked out and in action on lines proposed by Lord Hailey, which postulate assistance to the Colonies not merely on a theory of trusteeship, but on the assumption that the State must contribute to the depressed areas of the Empire as she does here in Great Britain. No Empire can be healthy and strong and progressive that has depressed areas; these are a liability and must be liquidated.

I will very briefly enumerate some of the results of the educational systems of Uganda and the Gold Coast, for it is obviously impossible to take each country on the east and west into review; and, further, I happen to know these two countries better than the others.

A comparison of the history of the growth of education in the Gold Coast and Uganda is most enlightening. In the Gold Coast, a richer country and one which has been in touch with Europe for centuries, you have some highly educated people but with the majority of the people still illiterate. In Uganda, cut off from Europe until 1880 and still hidden in the centre of Africa, you get a people the majority of whom are literate in the centre and rapidly becoming literate as you spread out to the circumference, but there are as yet fewer highly educated people than in the Gold Coast, though there is a fair modicum of well-educated

people. And the whole of life there has a steadier beat than in the Gold Coast, where the more unbalanced scheme of education results in social disturbances which are almost unknown in Uganda. There are political crises in Uganda, but nothing to approach the frequent de-stoolments and minor riots so common in the Gold Coast. Slums such as you see in the West Coast towns are almost non-existent in Uganda, and the Native Administrations in Uganda are more highly developed. Why this strange phenomenon? Are the people so different? I don't think so; I should consider that the Fanti and the Baganda are very much alike. I believe it is because of the vision and statesmanship of the early missionaries and officials in Uganda, and particularly Bishop Tucker—a great man, almost unknown outside the circle of the missionary world. They saw that if you got the chief you got the tribe; and anthropology now tells us why. Those people did not know all the reasons then, but they had gumption and vision. Behind their simple slogan—"get the chief and you get the tribe"—lies the philosophy of Indirect Rule, and I believe that Uganda was the first place where Indirect Rule was established, the principle which Lord Lugard made popular later in Nigeria, and which Sir Donald Cameron established in Tanganyika, but which is more stable and advanced in Uganda than anywhere. Uganda is, without doubt, the most prosperous—in the best sense—and most peaceful country in British tropical Africa, and there is no reason why it should not remain so if the Church and State are able to continue to work together in the education of the people while gradually throwing more and more authority on the native peoples.

In Uganda from 1877 onwards, no progress by Church or State was stable or lasting in any tribe until its chief or king was converted and had burnt his charms and fetishes before his people; the entail of fear from evil spirits was thus broken in the tribe, which followed the king as a matter of course. I am not unaware that there is still a lot of sorcery and witchcraft in Uganda, but it is no longer the dominant power. Unfortunately,

in the early revolution from animism to Christianity some of the good in the old tribal relationships was destroyed, but much less than our anthropologist friends would have us believe. I am sorry that the average anthropologist is not able to appreciate better the missionary work of the Church, for it is a phenomenon which no scientist ought to ignore or despise. He might make objective studies of the amazing educational work done by the missionaries in Uganda, for a nation was reborn and the education which inspired the best in the old pagan systems was on the whole absorbed, while that which was destroyed was replaced by a new system of education on which all, children and adults—except the infirm and aged—had to learn to read and write if they wished to be baptised.

Bush schools sprang up everywhere, and adults and children at first learnt together not only the simple dogmas of the Christian faith but the necessary moralities which are fundamental in the Christian ethic. The old burial and marriage rites were not destroyed, but enlightened and purified. The Church used the old system of a graded hierarchy of chiefs as her constitution, too, which began with the humble village teacher and rose to the more enlightened priest, who in the early days very often was a chief who gave up his chieftainship to be ordained. Into this hierarchical form of leadership, however, there was infused the idea of a presbytery—a body of elected counsellors chosen by the people; and so from the start a totalitarian state could not flourish and democracy was born. The State in her sphere acted in the same way, using the hierarchy of chiefs for her purpose, but bringing in a certain measure of government by the people, so that the tyranny which was such a curse in the old régime was curtailed right from the start. There grew gradually and steadily out of the self-governing Church and the less completely self-governing State a hunger, and, in fact, almost a passion, for education. From the beginning there were, besides the bush schools, boarding schools for boys to be trained as future leaders; and to a lesser extent for the girls, too; vocational training started

in carpentry, building, printing, blacksmithing and the improvement of agriculture. Hospitals were built; and so began the training of nurses and midwives. Also, teacher-training and theological colleges were founded. This tremendous change in a nation's life was simply revolutionary, but it need not be thought that it did not come without much trial and tribulation. From 1877 till 1890 and the death of King Mwanga there was no peace, and the missionaries' lives were in constant danger; some were murdered and many of their comparatively few followers were done to death, but when once the great chief accepted Christianity this revolution began to work, and gradually spread from tribe to tribe right through the Protectorate.

The amazing fact in this peaceful revolution was that society was not disrupted or the sense of community lost thereby. The reason for this was that the bush schools were from the start community schools, where the adults learnt as well as the children, and from which radiated a new culture which, generally speaking, kept all that was good in the old, but, fearlessly, grasped newer truths and different ethics which were revealed in the first instance by a study of the Christian Bible. Doubtless, history will prove to us that the school in the bush was not merely a catechetical school for religious propaganda (as some of our fellow countrymen believed), and therefore not to be considered in any Government education scheme, but the very foundation of the new life which transformed Uganda. It is encouraging to know that the Government did not repress these schools in Uganda—as it did in some parts—but is gradually improving and consolidating their position. There is, however, always a danger when we take our educational systems abroad that Government Inspectors will become immersed in educational techniques and curricula and systems, and forget the history and simple philosophy behind the bush schools. If ever they become merely schools for schooling and not the pride and centre of the whole village life, then the core will have gone, and

disruption will follow, and that priceless heritage which the African knows more about than we do will be lost—the sense and spirit of community life.

I have not time to discuss at length here the integration of the development of this community education in the bush schools with the training for leadership. But it is obvious that if you bring in a higher form of religion and a new set of values and spread them widecast in a society which has always depended on the leadership of chiefs and counsellors, then you must train your leaders, too, for this new situation, for there still must be leaders and chiefs even though their authority is modified and is exercised differently in a changing society. If the early missionary laid tremendous emphasis on the widespread foundation of bush schools, he laid no less emphasis on the training of leaders. And again here the *caveat* must be made that in the development of the big boarding schools, Budo, Kisubi, Mill Hill, Makerere and others, the mere training for a technical job is not enough, and this is a grave danger, owing to the pressure of events and the hunger of the African for what he is sometimes tempted to believe is progress—the mere accumulation of knowledge. “Brains trusts” are all very well, but brains alone don’t educate for life.

We turn to the Gold Coast, where you now find some of the highest education given in Africa. Scores of Africans hold British degrees, and there is a primary school system, directed and subsidized by Government and generally under the supervision of the Church, for some 50,000 children. Yet the majority of the people are illiterate and still under the fear of the fetish and the sorcerer, and few of the chiefs are able to read and write. The whole country is facing the devastating effects of a new and stronger culture bursting in, and it is remarkable that there are not more riots than there are, and that the frequent destoolments of chiefs do not paralyse the country. But there is no doubt that there is grave danger of social deterioration at a rapidly increasing rate.

The educational movement here began in a quite different way from that in Uganda. Missionaries went out in the early part of the nineteenth century, but had to confine their activities usually to the coast towns, cosmopolitan areas, which had grown up round castles built by different European nations to protect their interests in the slave trade and trade for gold and ivory. Close to the coast the tribal systems had been largely broken up by the depredations of the slave trade, and so, whether the missionaries wished to or not, they had little chance of getting to the centre of the tribal life of the people. Anyhow, they took the easier, though hard enough, task of trying to convert the peoples of the coastal towns to Christianity. They began by opening schools for the children, and gradually, over the course of half a century, Christian communities developed in the coast towns and on the Akropong ridge. But they had not their foundation in the tribal systems of the country: they were foreign bodies. Excellent schools sprang up, some of the best in Africa, both primary and secondary, and the Gold Coast has in Achimota, together with some missionary and private secondary schools, the most highly developed secondary education in tropical Africa. Large numbers of Gold Coast Africans have obtained British degrees, either through having resided in Great Britain or by taking their degrees externally.

Further, the primary education is, for Africa, of a very high standard, but between these schools and the tribal communities there is a big and dangerous gap. They have not grown out of the tribal life as in Uganda; they have been superimposed from the outside. The result is a general instability in the country and an exhibition of patchy and often irrelevant development. When General Guggisberg initiated his great forward educational movement he decided that the first essential was to train leaders, and so Achimota was built. But he did not understand that you cannot train leaders on the principle of keeping the best in the old culture and the best in the new—a new genus, and then expect them to make much impression on a mass of people who

are animistic and illiterate and of an entirely different culture. Before General Guggisberg became Governor the missionaries had begun to expand their educational work into the tribal areas away from the coast, and were wisely, as in Uganda, encouraging the development of bush schools which would have met and understood the large body of leaders about to be educated at Achimota and the secondary schools. But Sir Gordon Guggisberg was advised to close all these bush schools: quality not quantity was the slogan, and the bush schools didn't fit into the system of education. This was a costly mistake, but it can be retrieved, as the country is rich, comparatively speaking, and could rapidly develop a system of bush or elementary schools, "community centred" as the phrase goes here at home.

There were two tendencies, however, common to both movements, which weakened and frustrated some of the effort put into the work of education, and these were revealed by the two Phelps Stokes Commissions mentioned above. The first of these was a bias towards a literary education and away from a more practical form of education; and the second was the small number of girls being educated in comparison with the boys.

Taking the question of the content of the education first—the overburdening of the curriculum with academic subjects. This criticism can easily be over-emphasized, and might lead to an even more unbalanced form of education towards what is called generally "practical education," which is much favoured by those who want always to keep the African as the wage-earner of the European. It is good to remind ourselves of the history of this over-emphasis. In the early days both State and Commerce needed clerks very badly indeed, and the cry was always for clerks and more clerks. At the same time, however, the missionaries always trained a certain number of carpenters, builders and brick-workers, if only to build better houses, and there was much more practical education then than sometimes has been credited to the pioneers. It was the missionary who introduced coffee into Kenya and cotton into Uganda, and who probably

had something to do with the establishment of cocoa on the Akropong Ridge in the Gold Coast. Nevertheless, a time came when the clerk product swamped the market, and the townships unfortunately to this day are often crowded with boys who are looking for a clerk's job, and cannot find it.

This problem is being faced, but won't be solved easily until two things happen, the first of which rests with the British and American public, the other with the social service departments in the different territories. So long as the great democracies follow a policy aimed primarily at securing their minerals and their cocoa, coffee and vegetable oils cheap, so long will the African be unable to develop his land at a reasonable profit on the export crops he sells. In these circumstances he will hardly become a contented and moderately prosperous farmer, and he will see that his children are educated to try and get a job where there is better pay and a greater chance of advancement. Such prospects are to be found at present in what are generally called clerks' jobs, which lead on to managerial posts and higher grades in the civil service with a pension. Let us hope that all the work that the International Labour Office has done, and is doing, will prepare the way for a change in the hearts and minds of the great democracies now that the war is over.

But there is, too, much more that could be done to develop the internal economy of these countries, depending very largely on co-operation by the social service departments—medical, forestry, veterinary, public works, agriculture, and last, but not least, the educational department. There is no reason on earth why a peasant farmer should not live a much better life than he does at present, even without any thought of growing crops or working for an external market at all, if he is taught some of the rudiments of a nutritional diet; if the tsetse is controlled so that he can keep his cattle; if he knows how to deal with plant pests; if he is taught how to conserve his soil. A healthy rural economy will then begin to grow which will improve all living conditions. Science has done a great work in Africa in the agricultural,

forestry, veterinary and medical departments, and though there are many more fields to cover, enough has been done to start the peasant farmer on his way to producing enough to feed himself and his family and to pay for a good house, furniture and clothes, and the education of his children in the village school, with a little left over for pleasure or a rainy day.

The second major defect in the educational progress of these African countries revealed by the Phelps Stokes Commissions was in the education of women and girls. Dr. Aggrey, the famous African, who was a member of the two Phelps Stokes Commissions, often said, "When you educate a boy, you educate an individual; when you educate a girl you educate a family." In Africa the influence of the woman is fundamental, and it is to be regretted that more education has not in the past been given to women and girls. But it must be remembered that the missionaries had native custom against them. The chiefs could understand why a boy should be educated. Intertribal war existed no longer and the boys must be trained for the arts of peace. But the girls: what had they to learn? They had to bear children and attend to the home and hearth. There are only half as many girls as boys being educated to-day in both Uganda and the Gold Coast, and probably only half the amount is spent in hard cash on girls' education as on boys'. But there is a great urge on all sides for this to be altered—and not least from the educated young African men themselves, who desire educated wives.

New techniques must be used if we wish to give the present generation all that it ought to be given. It is obvious that you can't teach large masses of people why they must not cut down all their forest, or use the old methods of shifting cultivation, or why the magic and insanitary rites of childbirth are dangerous, or the overstocking of the land with inbred cattle is disastrous, unless intensified propaganda is employed. To this end the travelling cinema, and wireless, can be of inestimable benefit, and all the techniques used by the Americans in the back blocks

of Alabama and Georgia are equally applicable in Africa, though they would mean a concentrated attack on adult illiteracy.

With this community development must go the further advancement of the educated technicians and professional men to provide leadership in a growing and expanding society. The time is ripe for further development toward university education in Africa itself. This has been begun, but it cannot speed its way too quickly; and there cannot be adequate university education without much more research, whether into the flora and fauna of the country, the disease-carrying germs and insects, or the effects of the different cultural contacts going on continually in the social life of the people.

To attempt to make comparisons in education between the centuries' growth of an old civilization and the few years' growth of a primitive society is almost ridiculous; and to do it at the end of a paper in a few short words borders on stupidity. Nevertheless I want to throw out a suggestion which I hope will stimulate further thought.

It would not be difficult to trace in general outline the gradual evolution of our educational system, though it would take time. But it can be said now that this great field was not planned at all; it just grew, and from the top downwards. The Church was the mother of learning in feudal society; then came the Renaissance, when the content of this education for the few became the concern not only of the Church but of a wider society; and so on through history to our "liberal" period, when primary education became compulsory for all; and now, lately, the scientific age has greatly influenced the whole of education. The school system developed by fits and starts; prophets arose and pushed it on a further stage; labour leaders fought for a chance for the underdog; a public school system was evolved for the training of Christian gentlemen; workers' educational movements sprang up for those who had finished their formal education at thirteen or fourteen. Now education has become a ladder up which you struggle, trying to get enough knowledge to

obtain a good job in order to earn a decent living for yourself and your family; the higher you can climb the better. The privilege of wealth is gradually giving place to the privilege of better brains and a little more dogged perseverance than others. Education has become very much a competitive system, and in many ways selfish.

Now I want to compare this situation with the growth of education in Uganda, as I have spoken mostly about that country. Here was a backward people, uncivilized according to our standards, a people living in a communal society, every person, man, woman and child with his or her job to do for the family and the tribe, suddenly translated into a new world by the teaching of the missionaries. The whole nation went to school, and its animist society began to change to a Christian society, in which the ideal was to get more knowledge in order to serve God and man better. Christian education was "community-centred" from the beginning; it was part of the native society. The school was not, as it has been in our country, a place to which parents were forced to send their children, and at which they left them for the greater part of the day, knowing neither the teachers nor the surrounding, cut off from their society; nor was it a place far away from home to which parents sent their children and paid heavy fees, perhaps a home from home, but remote from the main stream of the life of society.

I am perfectly aware that this happy, "community-centred" state has not continued in its first small, but splendid beginning, though much survives. Contacts through trade, travel and the like have brought too much of the worst, as well as the best, of our civilization—largely acquisitive—to these people. Our church divisions have divided them. The educational system we are trying to build up now under Government law is too much like our own, and is, I think, on the whole weakening the struggling Christian society of earlier days. The Director of Education is in danger of becoming a pontiff with power of life and death over schools. The political administration, and in a

measure the Church, too, has broken down the old communal way of building and supporting schools, and has resorted to direct taxation and all the organization and forms so dear to the bureaucratic mind. This has meant that the village community no longer bears the school in the womb of its own society; the school tends more and more to be a foreign body for which Government is responsible, and which no longer belongs to the community.

I do not believe these powerful forces from the outside have made recovery impossible, because, firstly, a deep attachment to the local community still remains, together with clan and family loyalties which could retrieve the situation, and, as well, be strong enough to bear the changes which must come with the growth of knowledge, the increase in trade, the expansion of political systems and the shrinkage of the world owing to rapidity of communications; and, secondly, because we are undergoing an educational revolution at home the object of which is to make education "community-centred," and not a field of privilege for the few who have brains or money to continue their education into the twenties, nor a field of compulsion for the many to be educated up to fourteen and receive nothing beyond, and in which, in both cases, education functions outside the fuller life of the community.

There is, in fact, something we can learn from the growth of education in certain parts of Africa which would help to make education more the concern of society as a whole here in our own country.



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